



# Lincoln County Class IV Asbestos Landfill

## Technical Specifications Revision 0

June 26, 2002

*Preliminary For Review Only*

**LINCOLN COUNTY CLASS IV ASBESTOS LANDFILL  
PHASE I – LANDFILL CONSTRUCTION**

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# LINCOLN COUNTY CLASS IV ASBESTOS LANDFILL PHASE I - BID FORM

CONTRACTOR NAME: \_\_\_\_\_

Bid Item No.	General Description	Estimated Quantity	Unit	Unit Price (figures)	Unit Price (words)	Extended Price (figures)	Extended Price (words)
001	Mobilization and demobilization	LS	\$ _____/LS			\$ _____	\$ _____
002	Magnesium Chloride Application	LS	\$ _____/LS			\$ _____	\$ _____
003	Signs	LS	\$ _____/LS			\$ _____	\$ _____
004	Clearing and Grubbing	ACRE	\$ _____/ACRE			\$ _____	\$ _____
005	Stripping	CY	\$ _____/CY			\$ _____	\$ _____
006	Prepare road base course	SY	\$ _____/SY			\$ _____	\$ _____
007	Road surface course	TON	\$ _____/TON			\$ _____	\$ _____

# **LINCOLN COUNTY CLASS IV ASBESTOS LANDFILL PHASE I - BID FORM**

**CONTRACTOR NAME:** \_\_\_\_\_

Bid Item No.	General Description	Estimated Quantity	Unit	Unit Price (figures)	Unit Price (words)	Extended Price (figures)	Extended Price (words)
008	Erosion and Sedimentation Control		LS	\$ ____/LS		\$ ____	\$ ____
009	Stormwater Management		LS	\$ ____/LS		\$ ____	\$ ____
010	Fences and Gates		LF	\$ ____/CY		\$ ____	\$ ____
011	Decontamination Pad		LS	\$ ____/LS		\$ ____	\$ ____
012	Scale		LS	\$ ____/LS		\$ ____	\$ ____
013	Scale House		LS	\$ ____/LS		\$ ____	\$ ____
014	Excavation of Landfill Cell A		CY	\$ ____/CY		\$ ____	\$ ____



**LINCOLN COUNTY CLASS IV ASBESTOS LANDFILL PHASE I - BID FORM**

**CONTRACTOR NAME:** \_\_\_\_\_

Bid Item No.	General Description	Estimated Quantity	Unit	Unit Price (figures)	Unit Price (words)	Extended Price (figures)	Extended Price (words)
015	Telephone Cable Relocation		LS	\$ _____/LS		\$ _____	\$ _____
016	Electrical		LS	\$ _____/LS		\$ _____	\$ _____

**TOTAL CONTRACT PRICE** (Figures) \$ \_\_\_\_\_ (words) \_\_\_\_\_

## SECTION 01010

### SUMMARY OF WORK

#### PART 1 GENERAL

##### 1.01 DEFINITIONS

- A. Government - the government shall be defined as the United States Environmental Protection Agency (U.S. EPA).
- B. Contracting Officer (CO) – the contracting officer shall be defined as Volpe National Transportation Systems Center (Volpe Center).
- C. Contracting Officer's Technical Representative (COTR) - contracting officer's technical representative shall be defined as an authorized representative from the Volpe Center's Architect/ Engineering (A/E) firm.
- D. Contractor – the contractor shall be defined as the firm selected to perform the work of this contract and all of its subcontractors, suppliers and vendors.
- E. Government's Removal Contractor - shall be the Government's removal contractor and all of its subcontractors, suppliers and vendors who will operate the landfill, construct landfill cells excluded from this contract, and construct and revegetate the landfill final cover.
- F. Lincoln County – shall be the Lincoln County Environmental Health and Solid Waste Departments Director, Mr. Ronald L. Anderson.

##### 1.02 LOCATION OF WORK

- A. The work of this Contract is located in Lincoln County, Montana at the Lincoln County landfill facility.

##### 1.03 SCOPE OF WORK

- A. The work described in the Drawings and specifications will be constructed on Lincoln County property adjacent to the existing Lincoln County Class II and Class III landfill.
- B. Furnish all labor, materials, equipment, and incidentals required to construct a Class IV landfill cell, as shown on the Drawings and as specified herein.
- C. The work is being performed as part of the U.S. EPA asbestos removal and restoration project in Libby, Montana.
- D. The work includes clearing and grubbing the landfill area, constructing a weigh station, decontamination pad, access roads, landfill cell, and stormwater control features.
- E. Quantities represented by the following are approximate and for informational purposes only, and should not be relied upon for completion of the bid form. The Drawings and specifications are intended to provide a general description of the work to be performed. The Contractor is required to verify all dimensions prior to starting the work.
- F. Work performed in this Contract includes:

1. Clearing and Grubbing - This consists of removing stumps from an approximately 11 acre area. This area was previously cleared of trees by Lincoln County. The stumps will be removed from the landfill area, sediment ponds area and roads. The stumps will be placed in an area approved by Lincoln County within the property boundary.
2. Access road construction - This consists of preparation of native base course and installation of gravel surface course for 4,283 feet of gravel entrance and access roads.
3. Decontamination Pad Construction - This consists of the construction of a decontamination pad, sump, and underground water storage tank for personnel decontamination and decontamination of haul trucks and heavy equipment.
4. Weigh station construction - This consists of the construction of a weigh scale, installation of pre-fabricated weigh house building, and all associated electrical, telephone, and computer service. As part of the weigh station construction, the Contractor will purchase and install a computer program to automate truck weighing and track volumes of waste.
5. Stormwater Management - This consists of construction of drainage improvements including approximately 9,766 feet of ditches, 525 feet of storm drainage culverts and associated berms and other drainage features, in addition to management of stormwater runoff during construction activities. This also includes the construction of a primary and secondary sediment ponds. These stormwater features are shown on the Drawings.
6. Site Preparation - This consists of clearing of the stripping of 2-feet of native topsoil from landfill cell A. The top 6-inches of stripped material shall be segregated and stockpiled in the final cover soil stockpile as indicated on the Drawings and approved by Lincoln County. The remaining stripped soil shall be stockpiled in the general use stockpile as indicated on the Drawings and approved by Lincoln County.
7. Landfill Cell excavation - This consists of the excavation of a landfill cell of dimensions and location as shown on the Drawings. The cell will be excavated at a 1:1 side slope. The soil will be stockpiled in the location shown on the Drawings, designated by the CO/COTR, and approved by Lincoln County.
8. Erosion Control - This consists of the purchase and installation of silt fencing, hay bales and all other erosion control features indicated on the Drawings and in the Specifications.
9. Permanent Fence - This consists of construction of a 6-foot high chain link fence with barbed wire and a double locking gate as shown on the Drawings.
10. Signage - This consists of the purchase and installation of asbestos warning signs installed at 300 foot intervals along the perimeter fence and at the gate, project identification sign, and all other signs shown on the Drawings. Sign details are included in the Drawings.
11. Telephone Cable Relocation - This consists of the relocation of a telephone cable

from the location of the proposed truck scale to along the northern site property line as shown in the Drawings.

- G. Geotechnical investigations were conducted by the COTR in June 2002. The investigation report and testing results are included in Appendix A.

#### 1.03 WORK BY OTHERS

- A. The following work will be performed by others prior to the start of the work of this Contract.
1. Lincoln County will cut and remove all trees within the work area as shown on the Drawings.
  2. The COTR will perform a geotechnical investigation including the advancement of soil borings and the installation of upgradient and downgradient monitoring wells.
- B. The following work will be performed by the Government's Removal Contractor after the completion of the work of this Contract.
1. Operation of the landfill including site security, waste disposal, waste adjustment and compaction, and daily cover.
  2. Excavation of subsequent landfill cells (Cells B through M as shown on the Drawings).
  3. Installation of the final cover.
- C. The following work may be performed by others concurrently with the work of this Contract.
1. Operation of the landfill including site security, waste disposal, waste adjustment and compaction, and daily cover.
  2. Excavation of subsequent landfill cells (Cells B through M as shown on the Drawings).
  3. Installation of final cover on filled cells.
  4. Air monitoring will be performed by the COTR's team subcontractor Pacific Environmental Services.
  5. Collection of groundwater samples from the site monitoring wells by the COTR.

#### 1.04 CONTRACTOR'S USE OF SITE

- A. Contractor shall limit the use of the site for his/her work and for storage to allow for:
1. Work by other contractors.
  2. Access by Lincoln County personnel.

3. Operation of existing Lincoln County Class II and Class III landfill.
- B. Coordinate use of site with other contractors and CO/COTR.
- C. Contractor shall assume full responsibility for security of all his/her and his/her subcontractors materials and equipment stored on the site.
- D. If directed by the CO/COTR, move any stored items which interfere with operations of the Lincoln County Class II and Class III landfill or other contractors.
- E. Obtain and pay for use of additional storage or work areas if needed to perform the work.

1.05 SURVEY INFORMATION

- A. Information regarding the site survey and coordinate system is provided on Drawing No. C-1.
- B. Requirements for the Contractor's professional land surveyor, temporary benchmarks, baselines, and documentation are provided on Drawing No. C-1.
- C. Topography shown on the Drawings was obtained by Aerial survey conducted in April 2002 by Horizons, Inc. with survey control provided by JRS Surveying.

**END OF SECTION**

## SECTION 01014

### CONSTRUCTION SEQUENCE

#### PART 1 GENERAL

##### 1.01 SITE CONDITIONS

- A. Several areas of construction under this contract must be coordinated with ongoing site operations activities. The Contractor shall be responsible for coordinating construction activities under this Contract in a logical manner in compliance with the overall order of work noted herein that will result in the timely completion of this project. The Contractor will coordinate his/her activities with the CO/COTR to allow access to project areas as may be necessary for testing, inspection, construction, monitoring, maintenance, or observation. The Contractor will also coordinate his/her activities with other Contractors to allow orderly and timely completion of the work. Lincoln County at this time operates a Class II and Class III landfill adjacent to the site of the Class IV landfill cell. This operation will continue during the Class IV asbestos landfill construction contract.
- B. When access through construction areas must be disrupted, Contractor will provide alternate acceptable access for the other Contractors.
- C. Contractor is required to coordinate his/her activities in the interface or common areas with these other Contractors.
- D. In general, no work which affects, or could affect, operations of any site facilities shall be performed without a specific detailed plan by the Contractor approved in advance by the CO/COTR and the Government.

##### 1.02 WORK SEQUENCE

- A. Perform work in a sequence to facilitate completion of the work in the Contract time. Completion dates of various stages of work as well as the final planned work sequence, shall be in accordance with the approved construction schedule submitted by the Contractor.
- B. The site access road to be constructed as part of this Contract shall be in place prior to the installation of the truck scale and scale house building.

##### 1.03 CONSTRUCTION CONSTRAINTS

- A. The constraints to performance of the work required because of special sequencing with other parts of the work, calendar time constraints, and special testing, commissioning, and work procedures are identified in this Section. These constraints are in addition to the standard procedural constraints such as shop drawings, testing, commissioning, training, etc., and the above plant operational constraints. These constraints shall be included in the Contractor's construction schedule.
- B. Liquidated Damages for Failure to Meet Substantial Completion Schedule Liquidated damages may be triggered if the Contractor fails to meet the following deadline for completing the Work: All work required for the construction of the scale and scale house, decontamination pad, access roads, fences and signage, stormwater control features, excavation of the landfill cell, and all other work in the contract documents shall be substantially complete, as defined in the General Conditions, within ninety (90)

consecutive calendar days of the Project start date identified by Government in the Notice to Proceed, such that disposal of asbestos contaminated materials can begin. Contractor shall pay the Government the amount of Two Thousand Five Hundred (\$2,500.00) dollars per day for each day beyond either of the deadlines for substantial completion that the work is not substantially complete.

C. Existing Site Facilities

1. The existing site facilities, consisting of the operations related to the Lincoln County Class II and III landfill, will remain operational year round throughout the construction period.
2. The existing site facilities will be operated by Lincoln County.
3. All modifications to the site facilities shall be scheduled and coordinated with the CO/COTR and Lincoln County.

D. Equipment and Personnel Decontamination

1. Decontamination of equipment and personnel will occur at the decontamination pad to be constructed under this contract as shown in the Drawings. The decontamination pad will be used by the Contractor, Government, and CO/COTR. The Contractor shall coordinate access to the decontamination pad, subject to direction from the CO/COTR. The Contractor shall provide equipment to pump the decontamination pad water and shall clean out sediment from the decontamination pad and sump as required. Decontamination pad water and sediment shall be disposed of in the landfill cell to be constructed as part of this contract.

1.04 PRECONSTRUCTION MEETING

- A. The preconstruction meeting will be held on a date to be determined by the Government upon award of the contract.
- B. Attendance Required: Government, CO/COTR, Contractor, and invited agencies affected by the work.
- C. Agenda
  1. Review of schedules.
  2. Designation of personnel representing the Government, CO/COTR, Contractor, major subcontractors, and appropriate agencies; and exchange of emergency contact persons and telephone numbers.
  3. Procedures for submittals, substitutions, applications for payments, change orders, and Contract closeout.
  4. Government requirements.
- D. CO/COTR will record minutes and distribute copies to participants and those affected by decisions made.

**END OF SECTION**

01014-2

## SECTION 01025

### MEASUREMENT AND PAYMENT

#### PART 1 GENERAL

##### 1.01 MEASUREMENT AND PAYMENT ITEMS

- A. Measurement and Payment for all bid items except for "Mobilization and Demobilization" and "Decontamination Pad" is defined in the individual sections in Divisions 2 through 16. No separate measurement and payment will be made for the work specified in Divisions 0 and 1 unless otherwise noted in the Bid Form and individual sections. The work specified in Divisions 0 and 1 will be considered incidental to the other bid items, unless otherwise noted. Any work shown on the Drawings, or specified, that is not specifically stated to be all or part of a particular bid item, will be considered incidental to other bid items.

##### 1.02 MEASUREMENT AND PAYMENT FOR MOBILIZATION AND DEMOBILIZATION

- A. This item shall include all costs for the mobilization and demobilization of all of the Contractor's equipment to the site for performing the required work. Payment will be made based on the lump sum bid and the following breakdown:
  - 1. Sixty percent of the lump sum price upon completion of the Contractor's mobilization at the work site
  - 2. The remaining 40 percent upon completion of demobilization
- B. The Government may require the Contractor to furnish cost data to justify this portion of the bid if the Government believes that the cost for this item does not bear a reasonable relation to the cost of the work in this Contract.
  - 1. Failure to justify such price to the satisfaction of the Government will result in payment of:
    - a. Actual mobilization costs at the completion of mobilization
    - b. Actual demobilization costs at the completion of demobilization
    - c. The remainder of this item in the final payment under this Contract
  - 2. The Government's determination of the actual costs in paragraph B.1. of this Section is not subject to appeal.

##### 1.03 MEASUREMENT AND PAYMENT FOR DECONTAMINATION PAD

- A. Measurement
  - 1. No separate measurement will be made for construction of the decontamination pad.



**B. Payment**

1. Payment for construction of the decontamination pad will be made at the contract lump sum price for "Decontamination Pad." Price and payment shall constitute full compensation for furnishing all plant, labor, material and equipment, and performing all operations necessary for construction of the decontamination pad.

**END OF SECTION**

## SECTION 01101

### SAFETY, HEALTH AND EMERGENCY RESPONSE REQUIREMENTS

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. This Section describes the responsibilities of the Contractor for safety, health, and emergency response. The Government requires that work performed under this Section will not result in:
1. Injuries to employees or other persons.
  2. Employee exposures to health hazards above the occupational limits established by the Occupational Health and Safety Administration (OSHA), or the American Conference of Governmental Industrial Hygienists (ACGIH).
  3. Exposure of area residents to air contaminants above the levels established for general public exposure by the Environmental Protection Agency (EPA) or the Montana Department of Environmental Quality (DEQ).
  4. Significant increases in the levels of contaminants in soil, water, or sediment near the site.
  5. Violations of OSHA, EPA, or DEQ regulations.
- B. Any disregard for the provision of these Health and Safety requirements may be deemed just and sufficient cause for termination of the Contract without compensation for such termination.
- C. Maintain a comprehensive health and safety program that addresses lines of authority and responsibility for health and safety, medical monitoring, training and equipment programs, and health and safety recordkeeping. Site-specific requirements are discussed elsewhere in this Section.

##### 1.02 SUBMITTALS

- A. Submit, in accordance with Section 01300, one week prior to the Pre-Construction Conference or 30 days before mobilization to the job site, whichever is sooner, the following information:
1. A statement that Contractor maintains a Health and Safety Program (H&SP) which addresses the issues described in Paragraph 1.07 below.
  2. Name of Contractor's Health and Safety Officer and certification of Health and Safety Officer's authority.

##### 1.03 REGULATORY REQUIREMENTS

- A. Contractor's health and safety practices shall follow the standards and guidelines established in the publications listed below. These standards are incorporated in this

Section by reference:

1. Safety and Health Standards 29 CFR 1910 (General Industry), US Department of Labor, OSHA. ( Hereafter, referred as "29 CFR 1910").
2. OSHA Safety and Health Standards 29 CFR 1926 (Construction Industry), US Department of Labor, OSHA.

- B. This Section implements and amplifies procedures and requirements of the above referenced regulations and guidelines. These publications define terms and establishes procedures discussed in this Section, which incorporates them by reference. Where conflicts arise between the requirements of this Section and the above-listed standards and guidelines, the most restrictive requirement shall apply.

1.04 CONTRACTOR'S PERSONNEL

- A. Assign persons to fill each of the following roles. An individual can fill as many roles for which he or she is qualified.
- B. Health and Safety Officer - Designate an employee or company principal as its health and safety officer (HSO). This HSO must have the authority to command sufficient resources to safely perform the Work. Government will direct health and safety correspondence to this HSO.
- C. Site Health and Safety Coordinator
1. Designate a Site Health and Safety Coordinator (SHSC) for this project. Day-to-day safety support, including training and site safety inspections, shall be provided by the SHSC. SHSC shall have the authority to stop on-site operations when conditions threaten the health or safety of employees. The SHSC shall remain on-site during all project operations.
  2. SHSC shall have a sound working knowledge of occupational safety and health regulations, experience in the type of project described in this Section, and training in relevant practices and techniques.
- D. On-site Operations Manager - On-site activity of this project shall be under the control of an on-site operations manager. This manager shall have demonstrable experience with this type of project.

1.05 TRAINING

- A. Provide appropriate training to each on-site employee or subcontractor that could be exposed to hazards. Employees shall not participate in field activities until they have been trained to a level required by their job function and responsibility.
- B. At least one person who has been trained and certified in First Aid and CPR by the American Red Cross, or an equivalent organization, shall be present on-site during all project operations.
- C. Provide a site-specific training session for personnel scheduled to work on-site. This training shall include a health and safety briefing on the following information:

1. Names of personnel and alternates responsible for site safety and health.
  2. Hazards contractor expects at the site.
  3. Work practices by which the employee can minimize risks from hazards.
- D. Develop a training sequence to inform visitors of the hazards associated with the site and to explain emergency procedures.

#### 1.06 ACCIDENT OR INCIDENT REPORTS

- A. If an accident, an explosion or fire, or a release of toxic materials occurs during the course of the project, notify the Government and CO/COTR by telephone as soon as possible after emergency response agencies have been notified. Send the Government and CO/COTR notification within 24 hours.
- B. Within two working days of any reportable accident, complete and submit to the Government, an accident report addressing the following items:
1. Name, organization, telephone number, and location of the Contractor.
  2. Name and title of the person(s) reporting.
  3. Date and time of the accident/incident.
  4. Location of the accident/incident, i.e., site location, facility name.
  5. Brief summary of the accident/incident giving pertinent details including the operation ongoing at the time of the incident
  6. Cause of the incident, if known
  7. Casualties (fatalities, disabling injuries).
  8. Details of any existing chemical hazard or contamination.
  9. Estimated property damage, if applicable.
  10. Nature of damage, effect on contract schedule.
  11. Action taken by Contractor to ensure safety and security.
  12. Other damage or injuries sustained, public or private.

#### 1.07 HEALTH AND SAFETY PLAN

- A. The Contractor's Health and Safety Program shall address accident prevention and methods of avoiding physical hazards present at this site. The CO/COTR or Government will not provide comments on the plan, nor be responsible in any fashion for the Contractor's safety procedures. The Contractor should at a minimum include the following items:
1. Safety Organizations

2. Fire Prevention and Protection
3. Walking and Working Surfaces
4. Site Housekeeping
5. Mechanical Equipment Inspection
6. Sanitation
7. Daily Safety Inspections
8. Accident Reporting
9. Personal Protection (including respiratory) programs.

#### 1.08 SITE - SPECIFIC EQUIPMENT PRACTICES

- A. Once the landfill becomes operational and begins accepting asbestos containing materials, an exclusion zone will be formed around the active waste disposal area and all personnel will be upgraded to Level C PPE including air purifying respirators (APR). Only OSHA 40-hour Hazwopper trained personnel will be permitted within the exclusion zone. Work during landfill operation and therefore in Level C PPE is not a part of this contract.
- B. Assign personnel to an area or a task for which a respirator might be required only if they have passed a fit test with the make and model of respirator in use. Respirators shall not be interchanged between workers without cleaning and sanitizing.
- C. Prescription eyeglasses worn on site must meet ANSI Z87.1. Provide prescription lens inserts for employees who need to wear full face respirators.
- D. No employee shall be allowed access to any open landfill cell unless the slopes in the immediate access area are flattened to a slope of 3:1 or less.
- E. All employees shall wear steel toe shoes and other safety clothing, as appropriate while on site.

#### 1.09 STANDARD SAFETY OPERATING PROCEDURES

- A. Maintain a set of Standard Safety Operating Procedures to be implemented for this project. Personnel shall observe contamination control rules while on-site. Eating, drinking, smoking, chewing gum or tobacco, and other practices that increase the probability of hand-to-mouth transfer and ingestion of material is prohibited in any contaminated area.
- B. Electrical installations and appliances used shall meet applicable National Electrical Code standards. All electrical devices utilized by the Contractor or his subcontractors on this project shall be grounded or equipped with and utilize ground fault circuit interrupter (GFCI) protected outlets or extension cord sets. Electrical devices used in spaces that may contain flammable vapors shall be explosion proof.

#### 1.10 EMERGENCY PREPAREDNESS

- A. Contractor's plan for on-site and off-site emergencies shall address, at a minimum: the method by which personnel will communicate in the event of an emergency; communications with the office trailer that are outside vocal range normally occur by radio; and communications between Contractor and other organizations normally occur over the telephone. Keep a list of emergency telephone numbers on site.
- B. Provide appropriate emergency equipment, including an industrial-type first aid kit that is approved by its consulting physician for injuries and illnesses which may occur on site. A 20 lb ABC-rated fire extinguisher shall be maintained on-site.
- C. All site support vehicles shall be equipped with route maps providing directions to the nearest medical treatment facility. All drivers of the support vehicles shall become familiar with the emergency route and the travel time required at the beginning of project operations.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

**PART 4 MEASUREMENT AND PAYMENT**

**4.01 MEASUREMENT AND PAYMENT**

- A. No separate measurement and payment will be made for health, safety, and emergency response requirements. The work specified in this Section related to health, safety, and emergency response will be considered incidental to work specified in other sections.

**END OF SECTION**

## SECTION 01110

### ENVIRONMENTAL PROTECTION PROCEDURES

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. The work covered by this Section consists of furnishing all labor, materials, and equipment, and performing all work required for the prevention of environmental pollution in conformance with applicable laws and regulations, during and as the result of construction operations under this Contract. For the purpose of this Section, environmental pollution is defined as the presence of chemical, physical, radiological, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic and/or recreational purposes.
- B. The control of environmental pollution requires consideration of air, water, and land, and involves management of noise and solid waste, as well as other pollutants.
- C. Schedule and conduct all work in a manner that will minimize the erosion of soils in the area of the work. Provide erosion control measures such as diversion channels, sedimentation or filtration systems, berms, staked hay bales, seeding, mulching or other special surface treatments as are required to prevent silting and muddying of streams, rivers, impoundments, lakes, etc. All erosion control measures shall be in place in an area prior to any construction activity in that area. Specific requirements for erosion and sedimentation controls are specified in Section 02270.
- D. These specifications are intended to ensure that construction is achieved with a minimum of disturbance to the existing ecological balance between a water resource and its surroundings. These are general guidelines. It is the Contractor's responsibility to determine the specific construction techniques to meet these guidelines.

##### 1.02 APPLICABLE REGULATIONS

- A. Comply with all applicable federal, state, and local laws and regulations concerning environmental pollution control and abatement.

##### 1.03 NOTIFICATIONS

- A. The CO/COTR will notify the Contractor in writing of any noncompliance with the foregoing provisions or of any environmentally objectional acts and corrective action to be taken. State or local agencies responsible for verification of certain aspects of the environmental protection requirements shall notify the Contractor in writing, through the CO/COTR, of any noncompliance with state or local requirements. The Contractor shall, after receipt of such notice from the CO/COTR or from the regulatory agency through the CO/COTR, immediately take corrective action. Such notice, when delivered to the Contractor or his/her authorized representative at the site of the work, shall be deemed sufficient for the purpose. If the Contractor fails or refuses to comply promptly, the Government may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the Contractor unless it is later determined that the Contractor was in compliance.

## **1.04 IMPLEMENTATION**

- A. Prior to commencement of the work, meet with the CO/COTR to develop mutual understandings relative to compliance with this provision and administration of the environmental pollution control program.
- B. Remove temporary environmental control features, when approved by the CO/COTR and incorporate permanent control features into the project at the earliest practicable time.

## **PART 2 PRODUCTS (NOT USED)**

## **PART 3 EXECUTION**

### **3.01 EROSION CONTROL**

- A. Provide positive means of erosion control such as shallow ditches around construction to carry off surface water. The Contractor shall maintain erosion control measures, such as siltation basins, hay check dams, and silt fencing. Offsite surface water shall be diverted around the site, to a downstream channel ahead of siltation barriers. Flow of surface water into excavated areas shall be prevented. At the completion of the work, temporary ditches shall be backfilled and the ground surface restored to original condition.

### **3.02 PROTECTION OF STREAMS**

- A. Care shall be taken to prevent, or reduce to a minimum, any damage to any stream from pollution by debris, sediment, or other material, or from the manipulation of equipment and/or materials in or near such streams. Water that has been used for washing or processing, or that contains oils or sediments that will reduce the quality of the water in the stream, shall not be disposed in the landfill cells or through the stormwater ditches and ponds. Such waters will be disposed off offsite in an appropriate manner as directed by the CO/COTR.
- B. The Contractor shall not discharge water from dewatering operations directly into any live or intermittent stream, channel, wetlands, surface water, or any storm sewer. Water from dewatering operations shall be pumped and discharged to the stormwater ponds shown on the Drawings.
- C. All preventative measures shall be taken to avoid spillage of petroleum products and other pollutants. In the event of any spillage, prompt remedial action shall be taken in accordance with a contingency action plan approved by the Montana Department of Environmental Quality. Contractor shall prepare and submit two copies of approved contingency plans to the CO/COTR.

### **3.03 PROTECTION OF LAND RESOURCES**

- A. Land resources within the project boundaries and outside the limits of permanent work shall be restored to a condition, after completion of construction that will appear to be natural and not detract from the appearance of the project. Confine all construction activities to areas shown on the Drawings.
- B. Outside of areas requiring earthwork for the construction of the new facilities, the Contractor shall not deface, injure, or destroy trees or shrubs, nor remove or cut them



without prior approval. No ropes, cables, or guys shall be fastened to or attached to any existing nearby trees for anchorage unless specifically authorized by the CO/COTR. Where such special emergency use is permitted, first wrap the trunk with a sufficient thickness of burlap or rags over which softwood cleats shall be tied before any rope, cable, or wire is placed. The Contractor shall in any event be responsible for any damage resulting from such use.

- C. Where trees may possibly be defaced, bruised, injured, or otherwise damaged by the Contractor's equipment, dumping or other operations, protect such trees by placing boards, planks, or poles around them. Monuments and markers shall be protected similarly before beginning operations near them.
- D. Any trees or other landscape feature scarred or damaged by the Contractor's equipment or operations shall be restored as nearly as possible to its original condition. The CO/COTR will decide what method of restoration shall be used and whether damaged trees shall be treated and healed or removed and disposed.
- E. All scars made on trees by equipment, construction operations, or by the removal of limbs larger than 1-inch in diameter shall be coated as soon as possible with an approved tree wound dressing. All trimming or pruning shall be performed in an approved manner by experienced workmen with saws or pruning shears. Tree trimming with axes will not be permitted.
- F. Climbing ropes shall be used where necessary for safety. Trees that are to remain, either within or outside established clearing limits, that are subsequently damaged by the Contractor and are beyond saving in the opinion of the CO/COTR, shall be immediately removed and replaced.
- G. The locations of the Contractor's storage and other construction buildings, required temporarily in the performance of the work, shall be cleared portions of the job site or areas to be cleared as shown on the Drawings and shall require written approval of the CO/COTR and shall not be within wetlands or floodplains. The preservation of the landscape shall be an imperative consideration in the selection of all sites and in the construction of buildings. Drawings showing storage facilities shall be submitted for approval of the CO/COTR.
- H. If the Contractor proposes to construct temporary roads or embankments and excavations for plant and/or work areas, he/she shall submit the following for approval at least 10 days prior to scheduled start of such temporary work.
  - 1. A layout of all temporary roads, excavations, and embankments to be constructed within the work area.
  - 2. Details of temporary road construction.
  - 3. Drawings and cross sections of proposed embankments and their foundations, including a description of proposed materials.
  - 4. A landscaping drawing showing the proposed restoration of the area. Removal of any trees and shrubs outside the limits of existing clearing area shall be indicated. The drawing shall also indicate location of required guard posts or barriers required to control vehicular traffic passing close to trees and shrubs to be maintained undamaged. The drawing shall provide for the obliteration of

construction scars as such and shall provide for a natural appearing final condition of the area. Modification of the Contractor's approved drawings shall be made only with the written approval of the CO/COTR. No unauthorized road construction, excavation or embankment construction including disposal areas will be permitted.

- I. Remove all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess materials, or any other vestiges of construction as directed by the CO/COTR.

### 3.04 PROTECTION OF AIR QUALITY

- A. Burning - The use of burning at the project site for the disposal of refuse and debris will not be permitted by the Contractor.
- B. Dust Control - The Contractor will be required to maintain all excavations, embankment, stockpiles, access roads, plant sites, waste areas, borrow areas, and all other work areas within or without the project boundaries free from dust which could cause the standards for air pollution to be exceeded and which would cause a hazard or nuisance to others.
- C. An approved method of stabilization consisting of sprinkling or other similar methods will be permitted to control dust. The use of petroleum products is prohibited. The use of chlorides may be permitted with approval from the CO/COTR.
- D. Sprinkling, to be approved, must be repeated at such intervals as to keep all parts of the disturbed area at least damp at all times, and the Contractor must have sufficient competent equipment on the job to accomplish this if sprinkling is used. Dust control shall be performed as the work proceeds and whenever a dust nuisance or hazard occurs, as determined by the CO/COTR.
- E. Dust control for the site access roads will be conducted by the use of magnesium chloride in accordance with Section 01562.

### 3.05 MAINTENANCE OF POLLUTION CONTROL FACILITIES DURING CONSTRUCTION

- A. During the life of this Contract, maintain all facilities constructed for pollution control as long as the operations creating the particular pollutant are being carried out or until the material concerned has become stabilized to the extent that pollution is no longer being created.

### 3.06 NOISE CONTROL

- A. The Contractor shall make every effort to minimize noises caused by his/her operations. Equipment shall be equipped with silencers or mufflers designed to operate with the least possible noise in compliance with state and federal regulations.

**END OF SECTION**

## SECTION 01153

### CHANGE ORDER PROCEDURES

#### PART 1 GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. Promptly implement change order procedures.
  - 1. Provide full written data required to evaluate changes.
  - 2. Maintain detailed records of work done on a time-and-material/ force account basis.
  - 3. Provide full documentation to CO/COTR on request.
- B. Designate in writing the member of Contractor's organization:
  - 1. Who is authorized to accept changes in the Work.
  - 2. Who is responsible for informing others in the Contractor's employ of the authorization of changes in the Work.
- C. Government will designate in writing the person who is authorized to execute Change Orders.

##### 1.02 RELATED REQUIREMENTS

- A. Agreement, the amounts of established unit prices, is included in Section 00500.
- B. General conditions, the conditions of the contract, are included in Section 00700.
  - 1. Methods of determining cost or credit to Government resulting from changes in Work made on a time and material basis.
  - 2. Contractor's claims for additional costs.
- C. Construction Scheduling is included in Section 01311.
- D. Contract Closeout is included in Section 01700.

##### 1.03 DEFINITIONS

- A. Change Order: See Conditions of the Contract.
- B. Construction Change Authorization: A written order to the Contractor, signed by Government and CO/COTR, which amends the Contract Documents as described and authorized Contractor to proceed with a change which affects the Contract Sum or the Contract Time, for inclusion in a subsequent Change Order.

- C. Architect's Supplemental Instructions, AIA Document G710: A written order, instructions, or interpretations, signed by CO/COTR making minor changes in the Work not involving a change in Contract Sum or Contract Time.
- D. Field Order: A written order to the Contractor, signed by the CO/COTR and the Contractor, which is issued to interpret/clarify the Contract Documents, order minor changes in the work and/or document trade-off agreements. The work described by a Field Order is to be accomplished without change to the Contract Sum, Contract Time, and/or claims for other costs.

#### 1.04 PRELIMINARY PROCEDURES

- A. Government or CO/COTR may initiate changes by submitting a Request for Proposal (RFP) to Contractor. Request will include:
  - 1. Detailed description of the change, products, and location of the change in the Project.
  - 2. Supplementary or revised Drawings and Specifications.
  - 3. The projected time span for making the change and a specific statement as to whether overtime work is, or is not, authorized.
  - 4. A specific period of time during which the requested price will be considered valid.
  - 5. Such request is for information only and is not an instruction to execute the changes, nor to stop work in progress.
- B. Contractor may initiate changes by submitting a written notice to CO/COTR, containing:
  - 1. Description of the proposed changes.
  - 2. Statement of the reason for making the changes.
  - 3. Statement of the effect on the Contract Sum and the Contract Time.
  - 4. Statement of the effect on the work of separate contractors.
  - 5. Documentation supporting any change in Contract Sum or Contract Time, as appropriate.

#### 1.05 WORK DIRECTIVE CHANGE AUTHORIZATION

- A. In lieu of a RFP, CO/COTR may issue a work directive authorization for Contractor to proceed with a change for subsequent inclusion in a Change Order.
- B. Authorization will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change and will designate the method of determining any change in the Contract Sum and any change in Contract Time.

- C. Government and CO/COTR will sign and date the Work Directive Change Authorization as authorization for the Contractor to proceed with the changes.
- D. Contractor may sign and date the Construction Change Authorization to indicate agreement with the terms therein.

#### 1.06 DOCUMENTATION OF PROPOSALS AND CLAIMS

- A. Support each quotation for a lump-sum proposal and for each unit price which has not previously been established, with sufficient substantiating data to allow CO/COTR to evaluate the quotation.
- B. On request, provide additional data to support time and cost computations
  - 1. Labor required.
  - 2. Equipment required.
  - 3. Products required.
    - a. Recommended source of purchase and unit cost.
    - b. Quantities required.
  - 4. Taxes, insurance, and bonds.
  - 5. Credit for work deleted from Contract, similarly documented.
  - 6. Overhead and profit.
  - 7. Justification for any change in Contract Time.
- C. Support each claim for additional costs and for work done on a time-and-material/force account basis, with documentation as required for a lump-sum proposal, plus additional information.
  - 1. Name of the Government's authorized agent who ordered the work and date of the order.
  - 2. Dates and times work was performed and by whom.
  - 3. Time record, summary of hours worked, and hourly rates paid.
  - 4. Receipts and invoices for:
    - a. Equipment used, listing dates and times of use.
    - b. Products used, listing of quantities.
    - c. Subcontracts.

#### 1.07 PREPARATION OF CHANGE ORDERS AND FIELD ORDERS

- A. CO/COTR will prepare each Change Order and Field Order.
- B. Forms attached to the end of this Section.
- C. Change Order will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.
- D. Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.
- E. Field Order will describe interpretations or clarifications of Contract Documents, order minor changes in the Work, and/or memorialize trade-off agreements.
- F. Field Order work will be accomplished without change in the Contract Sum, Contract Time, and/ or claims for other costs.

#### 1.08 LUMP-SUM/FIXED PRICE CHANGE ORDER

- A. Content of Change Orders will be based on, either:
  - 1. CO/COTR's Proposal Request and Contractor's responsive Proposal as mutually agreed between Government and Contractor.
  - 2. Contractor's Proposal for a change, as recommended by CO/COTR.
- B. Government and CO/COTR will sign and date the Change Order as authorization for the Contractor to proceed with the changes.
- C. Contractor will sign and date the Change Order to indicate agreement with the terms therein.

#### 1.09 UNIT PRICE CHANGE ORDER

- A. Content of Change Orders will be based on, either:
  - 1. CO/COTR's definition of the scope of the required changes.
  - 2. Contractor's Proposal for a change, as recommended by CO/COTR.
  - 3. Survey of completed work.
- B. The amounts of the unit prices to be:
  - 1. Those stated in the Agreement.
  - 2. Those mutually agreed upon between Government and Contractor.
- C. When quantities of each of the items affected by the Change Order can be determined prior to start of the work:
  - 1. Government and CO/COTR will sign and date the Change Order as authorization for Contractor to proceed with the changes.

2. Contractor will sign and date the Change Order to indicate agreement with the terms therein.
- D. When quantities of the items cannot be determined prior to start of the work:
1. CO/COTR or Government will issue a construction change authorization directing Contractor to proceed with the change on the basis of unit prices, and will cite the applicable unit prices.
  2. At completion of the change, CO/COTR will determine the cost of such work based on the unit prices and quantities used.
    - a. Contractor shall submit documentation to establish the number of units of each item and any claims for a change in Contract Time.
  3. CO/COTR will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.
  4. Government and Contractor will sign and date the Change Order to indicate their agreement with the terms therein.

#### 1.10 TIME AND MATERIAL/FORCE ACCOUNT CHANGE ORDER/WORK DIRECTIVE CHANGE AUTHORIZATION

- A. CO/COTR and Government will issue a Work Directive Change Authorization directing Contractor to proceed with the changes.
- B. At completion of the change, Contractor shall submit itemized accounting and supporting data as provided in the Article "Documentation of Proposals and Claims" of this Section.
- C. CO/COTR will determine the allowable cost of such work, as provided in General Conditions and Supplementary Conditions.
- D. CO/COTR will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.
- E. Government and Contractor will sign and date the Change Order to indicate their agreement therewith.

#### 1.11 CORRELATION WITH CONTRACTOR'S SUBMITTALS

- A. Periodically revise Schedule of Values and Request for Payment forms to record each change as a separate item of Work, and to record the adjusted Contract Sum.
- B. Periodically revise the Construction Schedule to reflect each change in Contract Time.
  1. Revise subschedules to show changes for other items of work affected by the changes.
- C. Upon completion of work under a Change Order, enter pertinent changes in Record Documents.

## **PART 2 PRODUCTS (NOT USED)**

**PART 3      EXECUTION (NOT USED)**

(The attached Change Order and Field Order forms are also part of this Section)

**END OF SECTION**



## CHANGE ORDER

Project \_\_\_\_\_

Contract Title \_\_\_\_\_

Contract Number \_\_\_\_\_

Change Order Number \_\_\_\_\_

Original Contract Price \$ \_\_\_\_\_

Net Increase/Decrease in Contract Price \$ \_\_\_\_\_  
(this change order)

Total Adjusted Contract Price \$ \_\_\_\_\_  
(including this change order)

This change order increases/decreases the time to complete the work by \_\_\_\_\_ calendar days.

The extended completion date is \_\_\_\_\_.

This change order checked by \_\_\_\_\_  
(Chief) Resident Engineer (CO/COTR) \_\_\_\_\_  
Date \_\_\_\_\_

This change order is requested by \_\_\_\_\_  
Date \_\_\_\_\_

This change order is recommended by \_\_\_\_\_  
(CO/COTR) P.E. # \_\_\_\_\_  
Date \_\_\_\_\_

The undersigned agree to the terms of the change order

\_\_\_\_\_  
Contractor Date

\_\_\_\_\_  
Government Date

Approval as to appropriation \_\_\_\_\_

Certification Officer \_\_\_\_\_  
Date

Government's Name \_\_\_\_\_

Government's Address \_\_\_\_\_

Contractor's Name \_\_\_\_\_

Contractor's Address \_\_\_\_\_

Description of Change

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Reason for Change

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## FIELD ORDER

PROJECT \_\_\_\_\_

FIELD ORDER NO. \_\_\_\_\_

CONTRACT TITLE \_\_\_\_\_

DATE \_\_\_\_\_

CONTRACT NUMBER \_\_\_\_\_

CONTRACT DATE \_\_\_\_\_

GOVERNMENT \_\_\_\_\_

TO \_\_\_\_\_

This Field Order is issued to interpret/clarify the Contract Documents, order minor changes in the work and/or memorialize trade-off agreements. Both parties hereby agree that the work described by this Field Order is to be accomplished without change in Contract Sum, Contract Time, and/or claims for other costs.

DESCRIPTION (Insert a written description of the interpretation, change, or agreement below)

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FIELD ENGINEER (CO/COTR) \_\_\_\_\_

CONTRACTOR \_\_\_\_\_

BY \_\_\_\_\_

BY \_\_\_\_\_

## SECTION 01300

### SUBMITTALS

#### PART 1 GENERAL

##### 1.01 DESCRIPTION OF REQUIREMENTS

- A. This Section specifies the general methods and requirements of submissions applicable to Shop Drawings, Product Data, Samples, and Construction Schedules. Detailed submittal requirements are specified in the technical Sections.
- B. All submittals shall be clearly identified by reference to Section Number, Paragraph, Drawing Number or Detail as applicable. Submittals shall be clear and legible and of sufficient size for presentation of data.

##### 1.02 SHOP DRAWINGS, PRODUCT DATA, SAMPLES

###### A. Shop Drawings

- 1. Shop drawings as specified in individual Sections include, custom-prepared data such as fabrication and erection/installation (working) drawings, scheduled information, setting diagrams, actual shopwork manufacturing instructions, custom templates, special wiring diagrams, coordination drawings, individual system or equipment inspection and test reports including performance curves and certifications, as applicable to the work.
- 2. All shop drawings submitted by subcontractors shall be sent directly to the Contractor for checking. The Contractor shall be responsible for their submission at the proper time so as to prevent delays in delivery of materials.
- 3. Check all subcontractor's shop drawings regarding measurements, size of members, materials and details to make sure that they conform to the intent of the Drawings and related Sections. Return shop drawings found to be inaccurate or otherwise in error to the subcontractors for correction before submission thereof.
- 4. All details on shop drawings shall show clearly the relation of the various parts to the main members and lines of the structure and where correct fabrication of the work depends upon field measurements, such measurements shall be made and noted on the drawings before being submitted.

###### B. Product Data

- 1. Product data as specified in individual Sections include, standard prepared data for manufactured products (sometimes referred to as catalog data), such as the manufacturer's product specification and installation instructions, availability of colors and patterns, manufacturer's printed statements of compliances and applicability, roughing-in diagrams and templates, catalog cuts, product photographs, concrete mixes, sieve analyses, reinforcing bar placement details, Material Data Safety Sheets, standard wiring diagrams, printed performance curves and operational-range diagrams, production or quality control inspection and test reports and certifications, mill reports, product operating and maintenance

instructions and recommended spare-parts listing and printed product warranties, as applicable to the work.

C. Samples

1. Samples specified in individual Sections include, physical examples of the work such as sections of manufactured or fabricated work, small cuts or containers of materials, complete units of repetitively-used products, color/texture/pattern swatches and range sets, specimens for coordination of visual effect, graphic symbols and units of work.

1.03 CONTRACTOR'S RESPONSIBILITIES

- A. Review shop drawings, product data and samples, including those by subcontractors, prior to submission to determine and verify the following:
  1. Field measurements
  2. Field construction criteria
  3. Catalog numbers and similar data
  4. Conformance with related Sections
- B. Each shop drawing, sample and product data submitted by the Contractor shall have affixed to it the following Certification Statement including the Contractor's Company name and signed by the Contractor: "Certification Statement: by this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements." Shop drawings and product data sheets 11-in x 17-in and smaller shall be bound together in an orderly fashion and bear the above Certification Statement on the cover sheet. The cover sheet shall fully describe the packaged data and include a listing of all items within the package.
- C. Notify the CO/COTR in writing, at the time of submittal, of any deviations in the submittals from the requirements of the Contract Documents.
- D. The review and approval of shop drawings, samples or product data by the CO/COTR shall not relieve the Contractor from the responsibility for the fulfillment of the terms of the Contract.
- E. No portion of the work requiring a shop drawing, sample, or product data shall be started nor shall any materials be fabricated or installed prior to the approval of such item. Fabrication performed, materials purchased or on-site construction accomplished which does not conform to approved shop drawings and data shall be at the Contractor's risk. The Government will not be liable for any expense or delay due to corrections or remedies required to accomplish conformity.
- F. Project work, materials, fabrication, and installation shall conform to approved shop drawings, applicable samples, and product data.

1.04 SUBMISSION REQUIREMENTS

- A. Make submittals promptly in accordance with approved schedule and in such sequence as to cause no delay in the Work or in the work of any other contractor.
- B. Each submittal, appropriately coded, will be returned within 15 business days following receipt of submittal by the CO/COTR.
- C. Number of submittals required:
  - 1. Shop Drawings: five copies.
  - 2. Product Data: Four copies.
  - 3. Samples: Submit the number stated in the respective Sections.
- D. Submittals shall contain:
  - 1. The date of submission and the dates of any previous submissions.
  - 2. The Project title and number.
  - 3. Contractor identification.
  - 4. The names of:
    - a. Contractor
    - b. Supplier
    - c. Manufacturer
  - 5. Identification of the product, with the section number, page and paragraph(s).
  - 6. Field dimensions, clearly identified as such.
  - 7. Relation to adjacent or critical features of the work or materials.
  - 8. Applicable standards, such as ASTM or Federal Standards numbers.
  - 9. Identification of deviations from Contract Documents.
  - 10. Identification of revisions on resubmittals.

1.05 REVIEW OF SHOP DRAWINGS, PRODUCT DATA, WORKING DRAWINGS AND SAMPLES

- A. The review of shop drawings, data and samples will be for general conformance with the design concept and Contract Documents. They shall not be construed as:
  - 1. permitting any departure from the Contract requirements;
  - 2. relieving the Contractor of responsibility for any errors, including details, dimensions, and materials;

3. approving departures from details furnished by the COTR, except as otherwise provided herein.
- B. The Contractor remains responsible for details and accuracy, for coordinating the work with all other associated work and trades, for selecting fabrication processes, for techniques of assembly, and for performing work in a safe manner.
- C. Submittals will be returned to the Contractor under one of the following codes.

Code 1 - "APPROVED" is assigned when there are no notations or comments on the submittal. When returned under this code the Contractor may release the equipment and/or material for manufacture.

Code 2 - "APPROVED AS NOTED". This code is assigned when a confirmation of the notations and comments IS NOT required by the Contractor. The Contractor may release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product.

Code 3 - "NOT APPROVED" is assigned when the submittal does not meet the intent of the Contract Documents. The Contractor must resubmit the entire package revised to bring the submittal into conformance. It may be necessary to resubmit using a different manufacturer/vendor to meet the Contract Documents.

Codes 1 through 3 designate the status of the reviewed submittal with Code 6 showing there has been an attachment of additional data.

- D. Resubmittals will be handled in the same manner as first submittals. On resubmittals the Contractor shall identify all revisions made to the submittals, either in writing on the letter of transmittal or on the shop drawings by use of revision triangles or other similar methods. The resubmittal shall clearly respond to each comment made by the CO/COTR on the previous submission. Additionally, the Contractor shall direct specific attention to any revisions made other than the corrections requested by the CO/COTR on previous submissions.
- E. Partial submittals may not be reviewed. The CO will be the only judge as to the completeness of a submittal. Submittals not complete will be returned to the Contractor and will be considered "Not Approved" until resubmitted. The CO/COTR may at his option provide a list or mark the submittal directing the Contractor to the areas that are incomplete.
- F. When the shop drawings have been completed to the satisfaction of the CO/COTR, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the CO/COTR.

#### 1.06 DISTRIBUTION

- A. Distribute reproductions of approved shop drawings and copies of approved product data and samples, where required, to the job site file and elsewhere as directed by the CO/COTR. Number of copies shall be as directed by the CO/COTR but shall not exceed five.

#### 1.07 GENERAL PROCEDURES FOR SUBMITTALS

- A. Coordination of Submittal Times: Prepare and transmit each submittal sufficiently in advance of performing the related work or other applicable activities, or within the time specified in the individual work of other related Sections, so that the installation will not be delayed by processing times including disapproval and resubmittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery and similar sequenced activities. No extension of time will be authorized because of the Contractor's failure to transmit submittals sufficiently in advance of the Work.

**END OF SECTION**



## SECTION 01311

### CONSTRUCTION SCHEDULING

#### PART 1 GENERAL

##### 1.01 PROGRAM DESCRIPTION

- A. A construction schedule shall be used to control the work of this Contract and to provide a definitive basis for determining job progress. Preparation and updating of the construction schedule shall be the responsibility of the Contractor. All work shall be done in accordance with the established schedule and the Contractor and his/her subcontractors shall be responsible for cooperating fully with the CO/COTR and the Government in effectively utilizing the schedule.
- B. The schedule to be prepared and submitted by the Contractor shall meet the requirements specified herein.

##### 1.02 SCHEDULE REQUIREMENTS

- A. The schedule shall show the order and interdependence of activities and the sequence in which the work is to be accomplished as planned by the Contractor. The schedule shall show how the start of a given activity is dependent on the completion of preceding activities and its completion restricts the start of following activities.
- B. Schedule activities shall include: construction activities, the submittal and approval of samples of materials and shop drawings, the procurement of materials and equipment, fabrication of materials and equipment, and their delivery, installation and testing, start-up, and training. Specific construction activities which shall be included are: installation of scale and scale house building, construction of decon pad, construction of roads, grubbing, clearing and stripping of landfill area, construction of stormwater and erosion control features, installation of signs and fencing, and excavation of landfill cell.
- C. The schedule shall include the following tabulations: a list of activities in numerical order, a list of activity precedences, a schedule sequenced by Early Start Date and a schedule sequenced by Total Float. Each schedule shall include the following minimum items:
  - 1. Activity numbers
  - 2. Estimated duration
  - 3. Activity description
  - 4. Early start date (calendar dated)
  - 5. Early finish date (calendar dated)
  - 6. Latest allowable start date (calendar dated)
  - 7. Latest allowable finish date (calendar dated)

8. Status (whether critical)
  9. Estimated cost of the activity
  10. Total float and free float
- D. In addition, each schedule shall be prefaced with the following summary data:
1. Contract name and number
  2. Contractor's Name
  3. Contract duration
  4. Contract schedule
  5. The effective or starting date of the schedule (the date indicated in the Notice to Proceed).
- E. The work day shall be correlated to calendar day with adequate allowance for holidays, adverse weather and all other special requirements (such as length of work day) of the work.
- F. Except where earlier completions are specified, schedules which show completion of all work prior to the contract completion date may be approved by the CO/COTR but in no event shall they be acceptable as a basis for claim for delay against the Government by the Contractor.

#### 1.03 INITIAL CONFERENCE

- A. Within 15 days following the receipt of the Notice to Proceed, meet with the CO/COTR to discuss and agree on the proposed standards for the schedule. At this conference submit to the CO/COTR a general approach for the planned operations.

#### 1.04 APPROVED SCHEDULE

- A. Within 21 days following the receipt of the Notice to Proceed, submit the proposed schedule to the CO/COTR. Following review by the CO/COTR, the Contractor shall incorporate the CO/COTR's comments and submit a revised copy of the schedule. This final submittal shall be delivered to the CO/COTR within 15 days after receipt of CO/COTR's comments.
- B. Approval of the schedule by the CO/COTR is advisory only and shall not relieve the Contractor of responsibility for accomplishing the work within the contract completion date. Omissions and errors in the approved schedule shall not excuse performance less than that required by the Contract. Approval by the CO/COTR in no way makes the CO/COTR an insurer of the schedule's success or liable for time or cost overruns flowing from its shortcomings. The Government hereby disclaims any obligation or liability by reason of approval by its agent, the CO/COTR, of the schedule.

#### 1.05 PROGRESS REPORTING

- A. Progress under the approved schedule shall be evaluated monthly by the Contractor and the CO/COTR. At each monthly progress meeting, they shall meet at the jobsite and jointly evaluate the status of each activity on which work has started or is due to start, based on the preceding schedule; to show actual progress, to identify those activities started and those completed during the previous period, to show the estimated time required to complete or the percent complete of each activity started but not yet completed and to reflect any changes indicated for the network. Activities shall not be considered to be complete until they are, in fact, 100 percent complete.
- B. The Contractor shall produce from this evaluation an updated schedule and Status Report for the project.
- C. The Status Report shall include a description of the progress during the previous period in terms of completed activities, an explanation of each activity which is showing a delay, a description of problem areas, current and anticipated delaying factors and their estimated impact on performance of other activities and completion dates, and an explanation of corrective action taken or proposed. This report, as well as the will be discussed at each progress meeting.

#### 1.06 RESPONSIBILITY FOR SCHEDULE COMPLIANCE

- A. Whenever it becomes apparent from the current schedule and Status Report that delays to the critical path have resulted and the contract completion date will not be met, or when so directed by the CO/COTR, take some or all of the following actions at no additional cost to the Government. Submit to the CO/COTR for approval, a written statement of the steps intended to take to remove or arrest the delay to the critical path in the approved schedule.
  - 1. Increase construction manpower in such quantities and crafts as will substantially eliminate the backlog of work.
  - 2. Increase the number of working hours per shift, shifts per day, working days per week, the amount of construction equipment, or any combination of the foregoing, sufficiently to substantially eliminate the backlog of work.
  - 3. Reschedule activities to achieve maximum practical concurrence of accomplishment of activities and comply with the revised schedule.
- B. If when so requested by the CO/COTR, failure to submit a written statement of the steps intended to take or should fail to take such steps as approved by the CO/COTR, the CO/COTR may direct the Contractor to increase the level of effort in manpower (trades), equipment and work schedule (overtime, weekend and holiday work, etc.) to be employed by the Contractor in order to remove or arrest the delay to the critical path in the approved schedule and the Contractor shall promptly provide such level of effort at no additional cost to the Government.

#### 1.07 ADJUSTMENT OF CONTRACT SCHEDULE AND COMPLETION TIME

- A. If the Contractor desires to make changes in his/her method of operating which affect the approved schedule, he/she shall notify the CO/COTR in writing stating what changes are proposed and the reason for the change. If the CO/COTR approves these changes, the Contractor shall revise the schedule and submit it for approval, without additional cost to the Government. The schedule shall be adjusted by the Contractor only after prior approval of his/her proposed changes by the CO/COTR. Adjustments may consist of

changing portions of the activity sequence, activity durations, division of approved activities, or other adjustments as may be approved by the CO/COTR. The addition of extraneous, non-working activities and activities which add unapproved restraints to the schedule shall not be approved.

- B. If the completion of any activity, whether or not critical, falls more than 100 percent behind its approved duration, submit for approval a schedule adjustment showing each such activity divided into two activities reflecting completed versus uncompleted work.
- C. Shop drawings which are not approved on the first submittal or within the schedule time and equipment which do not pass the specified tests shall be immediately rescheduled.
- D. The contract completion time will be adjusted only for causes specified in this Contract. In the event the Contractor requests an extension of any contract completion date, he/she shall furnish such justification and supporting evidence as the CO/COTR may deem necessary to determine whether the Contractor is entitled to an extension of time under the provisions of this Contract. The CO/COTR will, after receipt of such justification and supporting evidence, make findings of fact and will advise the Contractor in writing thereof. If the CO/COTR finds that the Contractor is entitled to any extension of any contract completion date, the CO/COTR's determination as to the total number of days extension shall be based upon the currently approved schedule and on all data relevant to the extension. Such data shall be included in the next updating of the schedule. Actual delays in activities which, according to the schedule, do not affect any contract completion date shown by the critical path in the network will not be the basis for a change therein.
- E. Each request for change in any contract completion date shall be submitted by the Contractor to the CO/COTR within 30 days after the beginning of the delay for which a time extension is requested but before the date of final payment under this Contract. No time extension will be granted for requests which are not submitted within the foregoing time limit.
  - 1. From time to time it may be necessary for the contract schedule or completion time to be adjusted by the Government to reflect the effects of job conditions, weather, technical difficulties, strikes, unavoidable delays on the part of the Government or its representatives and other unforeseeable conditions which may indicate schedule adjustments or completion time extensions. Under such conditions, the CO/COTR will direct the Contractor to reschedule the work or contract completion time to reflect the changed conditions and the Contractor shall revise his/her schedule accordingly. No additional compensation will be made to the Contractor for such schedule changes except for unavoidable overall contract time extensions beyond the actual completion of all unaffected work, in which case the Contractor shall take all possible action to minimize any time extension and any additional cost to the Government. Available float time in the schedule may be used by the Government as defined by the CO/COTR, as well as by the Contractor.

#### 1.08 COORDINATING SCHEDULES WITH OTHER CONTRACT SCHEDULES

- A. Where work is to be performed under this Contract concurrently with or contingent upon work performed on the same facilities or area under other contracts, the Contractor's Schedule shall be coordinated with the schedules of the other contracts. Obtain the schedules of the other appropriate contracts from the Government for the preparation and

updating of the schedule and make the required changes in the schedule when indicated by changes in corresponding schedules.

- B. In case of interference between the operations of different contractors, the Government will determine the work priority of each contractor and the sequence of work necessary to expedite the completion of the entire project. In all such cases, the decision of the Government shall be accepted as final. The temporary delay of the Contractor's work due to such circumstances shall not be considered as justification for claims for additional compensation.

**END OF SECTION**

## SECTION 01400

### CONTRACTOR QUALITY CONTROL

#### PART 1 GENERAL

##### 1.01 QUALITY CONTROL PLAN

- A. General: Furnish for approval by the Government, the Contractor Quality Control (CQC) Plan at the Pre-Construction meeting. The plan shall identify personnel, procedures, instructions, records, and forms to be used. Failure to submit an acceptable QC plan within the time herein prescribed may result in the Government refusing to allow construction to start until such time as an acceptable final plan is submitted.
- B. The Contractor Quality Control Plan: This plan shall include as a minimum, the following:
  - 1. A description of the quality control organization, including chart showing lines of authority and acknowledgment that the Contractor's QC staff shall report to the Project Manager or someone higher in the Contractor's organization.
  - 2. The name, qualifications, duties, responsibilities, and authorities of each person assigned a QC function.
  - 3. A copy of a statement signed by an authorized official of the Contractor's firm, which describes the responsibilities and delegates the authorities of the CQC System Manager.
- C. Acceptance of Plan: Acceptance of the plan by the Government is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction.
- D. Notification of Changes: After acceptance of the CQC plan; notify the Government in writing of any proposed change. Proposed changes are subject to acceptance by the Government.

##### 1.02 QUALITY CONTROL ORGANIZATION

- A. CQC System Manager: CQC System Manager shall be responsible for overall management of the CQC and have the authority to act in all CQC matters for the Contractor. This person shall demonstrate his/her ability to perform correctly the duties required of him/her to the satisfaction of the Government and shall be physically at the project site whenever work is in progress and will be in charge of the Contractor's Quality Control program for this project. All the Contractor's submittals for approval shall be reviewed and modified or corrected as needed by him/her or his/her authorized assistants and approved correct prior to forwarding of such submittals to the Government.
- B. Personnel: The personnel of the CQC staff shall be fully qualified by experience and technical training to perform their assigned responsibilities and shall be directly hired by and work for the Contractor.

##### 1.03 SUBMITTALS

- A. Submittals shall be as specified in Section 01300. The CQC Organization shall be responsible for certifying that all submittals are in compliance with the contract requirements.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION**

**3.01 CONTROL**

- A. Contractor Quality Control is the means by which the Contractor assures himself that his/her construction complies with the requirements of the contract plans and specifications. The controls shall be adequate to cover all construction operations, including both onsite and offsite operations, and will be keyed to the proposed construction sequence. The controls shall include at least three phases of inspection for all definitive features of work as follows:
1. Preparatory Inspection: This shall be performed prior to beginning any definable feature of work. It shall include a review of contract requirements; a check to assure that all materials and/or equipment have been tested, submitted and approved; a check to assure that provisions have been made to provide required control testing; examination of the work area to ascertain that all preliminary work has been completed and a physical examination of materials to assure that they conform to approved submittal data and that all materials and/or equipment are on hand.
  2. Initial Inspection: This shall be performed as soon as a representative portion of the particular feature of work has been accomplished and shall include examination of the quality of workmanship and a review of control testing for compliance with contract requirements, use of defective or damaged materials, omissions, and dimensional requirements.
  3. Follow-Up Inspection: These shall be performed daily to assure continuing compliance with contract requirements, including control testing, until completion of the particular feature of work. Such inspection shall be made a matter of record in the CQC documentation as required below. Final follow-up inspections shall be conducted and deficiencies corrected prior to the addition of new features of work.

**3.02 COMPLETION INSPECTION**

- A. At the completion of all work or any increment thereof established by a completion time stated in the specifications, the CQC System Manager shall conduct a completion inspection of the work and develop a "punch list" of items which do not conform to the approved plans and specifications. Such a list shall be included in the CQC documentation, as required below, and shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or his/her staff shall make a second completion inspection to ascertain that all deficiencies have been corrected and so notify the Government. The completion inspection and any deficiency corrections required by this paragraph will be accomplished within the time stated for completion of the entire work or any particular increment thereof if the project is divided into increments by separate completion dates.

**3.03 DOCUMENTATION**

- A. Maintain current records of quality control operations, activities, and tests performed including the work of suppliers and subcontractors. These records shall be on an acceptable form (sample form attached) and indicate a description of trades working on the project, the numbers of personnel working, the weather conditions encountered, any delays encountered, and acknowledgment of deficiencies noted along with the corrective actions taken on current and previous deficiencies. In addition, these records shall include factual evidence that required activities or tests have been performed, including but not limited to the following:
1. Type and number of control activities and tests involved.
  2. Results of control activities or tests.
  3. Nature of defects, causes for rejection, etc.
  4. Proposed remedial action.
  5. Corrective actions taken.
- B. These records shall cover both conforming and defective or deficient features and shall include a statement that supplies and materials incorporated in the work comply with the requirements of the contract. Legible copies of these records shall be furnished to the Government daily.

#### 3.04 NOTIFICATION OF NONCOMPLIANCE

- A. The Government or CO/COTR will notify the Contractor of any noncompliance with the foregoing requirements. After receipt of such notice, immediately take corrective action. Such notice, when delivered to the Contractor or his/her representative at the site of the work, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Government may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

(The attached QC Daily Report is part of this Section)

END OF SECTION



## QUALITY CONTROL DAILY REPORT

(CONTRACTOR)

REPORT NO. \_\_\_\_\_ CONTRACT NO. \_\_\_\_\_ DATE \_\_\_\_\_

LOCATION OF WORK: \_\_\_\_\_

DESCRIPTION: \_\_\_\_\_

WEATHER \_\_\_\_\_, RAINFALL \_\_\_\_\_ INCHES, TEMP: \_\_\_\_\_ MIN \_\_\_\_\_ MAX

1. Work performed today by Contractor (include Equipment and Labor breakdown):
  
2. Work performed today by Subcontractors (include Equipment and Labor breakdown):
  
3. List specific inspection performed and results of these inspections (include Corrective Actions):
  
4. Verbal Instructions received from Government or CO/COTR on construction deficiencies or re-testing required:
  
5. Remarks:
  
6. CERTIFICATION: I certify that the above report is complete and correct and that I, or my authorized representative, have inspected the work performed this day by the Contractor and each subcontractor and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may be noted above.

\_\_\_\_\_  
Contractor's Designated Quality Control

## SECTION 01500

### TEMPORARY FACILITIES

#### PART 1 GENERAL

##### 1.01 CONTRACTOR'S FIELD OFFICE

- A. Temporary offices shall be established on the job site in the location shown on the Drawings, adequately furnished and maintained in a clean, orderly condition by the Contractor. The Contractor or his authorized representative shall be present in the field office at all times while work is in progress. Instructions received there from the CO/COTR or Government shall be considered as delivered to the Contractor.
- B. Field office shall be of adequate size to accommodate Contractor's staff and provide suitable space for project meetings. The office shall be provided with adequate lighting, heating, and air conditioning; telephone service; file cabinets and plan racks; conference table and chairs for project meetings; and temporary sanitary facilities for his staff. The field office may be constructed on site or may be a portable or mobile unit designed for the use.

##### 1.02 CO/COTR'S FIELD OFFICE

- A. Furnish, equip, maintain, and provide specified services for the CO/COTR's field office, including all necessary power, utilities, and insurances. The field office shall be maintained and serviced until the Certificate of Completion has been filed. The field office shall be complete and ready for occupancy by the CO/COTR within 21 days of Notice to Proceed. The complex shall conform to local building codes.
- B. Materials and Equipment
  - 1. The field office shall be 12-foot by 12-foot, minimum. Office shall be weathertight construction with floor, walls, and ceiling fully insulated.
  - 2. The office shall be provided with two exterior doors provided with Medeco lock systems, or equal, keyed alike. The CO/COTR shall be provided with two keys. At each entrance, a wooden stairway with railing and platform shall be provided. Office shall have at least two or more windows. All windows shall be thermopane glazed and be provided with screens and venetian blinds.
  - 3. Lavatory facilities shall be temporary and portable. No water or sewer service is available for the temporary facilities. The lavatory door shall be equipped with a lock.
  - 4. Office shall be separate from Contractor's office.
- C. Water and Sewer System
  - 1. Potable water supply and sanitary sewer connections will not be available for the temporary facilities.
  - 2. A hot and cold drinking water system shall be installed and a water delivery service maintained for the duration of the project.

3. Lavatory facilities shall be portable. A service contract shall be maintained for weekly cleaning throughout the project duration

D. Heating/Cooling System

1. The office shall be provided with central heating and air conditioning. The system shall be capable of maintaining an interior temperature of 70°F when the exterior temperature is -20°F and an interior temperature of 75°F when the exterior temperature is 100°F. The system shall be thermostatically controlled with a thermostat located on an interior partition, the exact location of which to be approved by the CO/COTR.

E. Electrical System

1. Installation shall include entrance connectors, grounding, enclosed fused service switches and branch circuit fuse boxes. Separate circuits shall be provided for lighting and other electrically operated items. Separate circuits shall be provided for the water heater, the photocopier, and two separate circuits for computers. Minimum circuit size shall be two conductor No. 12 AWG. Use heavier conductors where required. The entire electrical system and office shall be properly grounded.

F. Lighting and Outlets

1. Lighting shall be provided by fluorescent ceiling fixtures furnishing 20 foot-candles at desk height, uniform throughout. Each room shall be provided with a wall switch for ceiling fixtures. Each area shall be provided with duplex convenience outlets as required by local code.

G. Movable Equipment and Furniture

1. Field office furniture may be previously used if in excellent condition subject to CO/COTR's approval. Field office equipment shall be new. The field office shall be furnished with the following new equipment and furniture:
  - 1 - 60-inch by 30-inch desk with file drawer and five drawers, all lockable, and upholstered swivel type chair with arms
  - 1 - 60-inch by 36-inch drafting table with drawer and stool
  - 5 - Armless side chairs (stacking type)
  - 1 - 54-inch by 30-inch reference table
  - 1 - File cabinet, four drawer, legal size, Hon No. HN-315C, or equal
  - 1 - Wastebaskets
  - 1 - Storage cabinet, lockable, 72-inches high by 36-inches wide by 18-inches deep
  - 2 - Fire extinguishers, type B:C

- 1 - Steel bookcase units, four shelves high, Hon No. HN-S48 ABC, or equal
- 1 - Telephone answering machine, beeperless remote
- 1 - Coat stand
- 1 - Electric bottled water dispenser with hot and cold outlets and adequate water bottles
- 1 - First aid kit
- 2 - Smoke detectors with batteries
- 1 - Sharp Electrostatic Copy Machine Model No. SF-8100 with SF-432 and 465 attachments, or equal, with service contract for term of the contract
- 1 - Facsimile machine, fully automatic, G2 & 3 compatible, 38 number speed dial, 10 sheet document feeder, automatic paper cutter, Toshiba, FAX 4600, or equal, with service contract for term of the contract
- 2 - Pair of walkie talkies and chargers, Motorola, or equal

#### H. Telephone System and Equipment - Touch-Tone

1. The office shall be supplied with telephone service as follows:
  - a. Two voice grade lines.
  - b. Two additional separate lines: one for the facsimile machine and one for the computer modem.
2. Telephone instruments shall have the following features:
  - a. Automatic dialing of a minimum of 16 phone numbers, up to 30 digits each.
  - b. Speakerphone with volume control.
  - c. Hold.
  - d. Three way conference calls.
  - e. Three line operation capability.
  - f. Internal intercom.
3. One instrument shall be provided.
4. Pay all costs for installation, maintenance, and removal of the telephone service and instruments. The monthly cost of all calls made by the CO/COTR, except toll and long distance calls, shall be paid for by the Contractor.

I. Maintenance and Service

1. Provide maintenance and service, until the Certificate of Completion has been filed, as follows:
  - a. Repair, cleaning, and maintenance of the field office complex to include lavatory facilities, drinking water, light, heat, and janitorial services.
2. Janitorial services shall include the following:
  - a. Weekly cleaning of the lavatory facilities.
  - b. Weekly washing of the tile floors.
  - c. Weekly dusting.
  - d. Semiannual window cleaning.
  - e. Maintaining adequate supply of soap, toilet tissue, paper towels, and plastic garbage bags.
  - f. Exterminate the premises as necessary to control insect and rodent infestations.
  - g. Remove snow and salt stairways when needed.
  - h. Facsimile machine maintenance, service and supplies, including paper, for 300 pages per month.
  - i. Electric bottled water dispenser, including an adequate supply of bottled water.
  - j. Photocopier maintenance, service and supplies, including paper, toner, and other required supplies, for 300 copies per month.
  - k. Computer and peripheral equipment carry-in maintenance, including parts and labor.
  - l. If waste holding tanks are furnished, provide for pumping of waste content on a routine basis.

J. Insurance

1. The Contractor or the Contractor's leasing company shall provide fire insurance, extended coverage and vandalism, malicious mischief and burglary, and theft insurance coverage for the office and contents in the amount of \$100,000. Provide proof of coverage.

### 1.03 TEMPORARY LIGHT AND POWER

- A. Furnish temporary light and power, including 220 volt service for welding, complete with wiring, lamps, and similar equipment as required to adequately light all work areas and with sufficient power capacity to meet the reasonable needs of all subcontractors. Make all necessary arrangements with the local electric company for temporary electric service and pay all expenses in connection therewith.
- B. Install circuit and branch wiring, with area distribution boxes located so that power and lighting is available throughout the construction by the use of construction-type power cords.

### 1.04 TEMPORARY HEATING, COOLING, AND VENTILATING

- A. Provide temporary heating, cooling, and ventilating as required to maintain adequate environmental conditions to facilitate progress of the Work, to meet specified minimum conditions for the installation of materials and to protect materials and finishes from damage due to temperature or humidity.
- B. Provide adequate forced ventilation of enclosed areas for curing of installed materials, to disperse humidity and to prevent hazardous accumulations of dust, fumes, vapors, or gases.
- C. Portable heaters shall be standard approved units complete with controls.

### 1.05 REMOVAL

- A. Completely remove all temporary materials and equipment when their use is no longer required.
- B. Clean and repair damage caused by temporary installations or use of temporary facilities.
- C. Remove field offices, contents, and services from the site. The CO/COTR's field offices shall become the property of the Contractor. Remove foundations and debris and grade area to required elevations.

**END OF SECTION**

## SECTION 01562

### DUST CONTROL

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Perform dust control operations, in an approved manner, whenever necessary or when directed by the CO/COTR, even though other work on the project may be suspended. Dust control shall be generally accomplished by the use of water; however, the use of magnesium chloride shall be used to control dust on the landfill access roads.
- B. Methods of controlling dust shall meet all air pollutant standards as set forth by Federal and State regulatory agencies.

##### 1.02 RELATED WORK

- A. Section 01300 Submittals
- B. Section 02205 Access Roads
- C. Section 02223 Backfill and Compaction

##### 1.03 REFERENCES

- A. U.S. Department of Agriculture (USDA), *Forest Service Specifications for Construction of Roads and Bridges*, Section 723.01. August 1996.

##### 1.04 SUBMITTALS

- A. The Contractor shall submit to the CO/COTR, as provided in Section 01300 information as noted below.
  - 1. Certificates, test results, and sources for the magnesium chloride in accordance with USDA Forest Service Specifications Section 723.04.
  - 2. The source of the water to be used for dust control and the magnesium chloride brine solution.
  - 3. Documentation that the water used for dust control is free of contaminants, and that the water quality meets all EPA and state regulations.

##### 1.05 MATERIAL ACCEPTANCE

- A. Certification that the magnesium chloride solution was obtained from and an acceptable source shall be submitted to the CO/COTR for approval at least 30 days before the material is required for use or as specified.

#### PART 2 PRODUCTS

## 2.01 WATER

- A. Water for dust control shall be obtained from an off site source. No water will be available on site for dust control.
- B. Water shall be clear, free of contaminants, and meet all EPA and state regulations.

## 2.02 MAGNESIUM CHLORIDE

- A. Magnesium chloride brine solution shall consist of water and magnesium chloride with a minimum 28% magnesium chloride by weight.
- B. The magnesium chloride brine solution shall have a pH between 4.5 and 10.0.

## PART 3 EXECUTION

### 3.01 WATER APPLICATION

- A. Water shall be applied to roads or other site areas requiring dust control via water truck at a rate and frequency which controls all visible dust.

### 3.02 MAGNESIUM CHLORIDE APPLICATION

- A. Weather Limitations
  - 1. Magnesium chloride solution may be applied during a light rain provided the solution penetrates the road surface and does not flow to low surfaces or off the road surface.
  - 2. Magnesium chloride brine shall be applied only when the ambient temperature is 5 degrees Celsius or higher and when the ground is not frozen.
- B. Road Preparation
  - 1. The roads shall be compacted prior to magnesium chloride brine application as specified in Section 02223.
  - 2. Apply water to the roads as directed by the CO/COTR to ensure a near-optimum moisture content that will allow adequate penetration of the magnesium chloride brine.
- C. Application
  - 1. Equipment shall ensure uniform distribution across the width of the road surface.
  - 2. Solution application shall be uniform and at a rate of 0.5 to 2.6 liters per square meter with uniform pressure and application.
  - 3. Distribution equipment shall include accurate volume measuring devices or a calibrated tank, a thermometer, a spray bar which distributes a uniform volume across the bar, and a hose-and-nozzle attachment to apply solution to areas



inaccessible to the spray bar.

4. If more than one application is required, do not apply second application until the first has adequately penetrated.
5. Protect areas which shall not receive application and do not allow it to flow into ditches or streams.

D. Compaction

1. Compact the roads using rollers as soon as the magnesium chloride solution has penetrated enough to prevent pickup of the material.
2. Make passes with the roller over the entire width of the road, but make no fewer than three passes.

E. Opening to Traffic

1. Traffic shall not be permitted on the magnesium applied roads until it has penetrated and cured enough to prevent excessive pickup under traffic.

**PART 4 MEASUREMENT AND PAYMENT**

**4.01 MAGNESIUM CHLORIDE APPLICATION ON ACCESS ROADS**

A. Measurement

1. No separate measurement will be made for the application of magnesium chloride to the access roads.

B. Payment

1. Payment will be made at the contract lump sum price for "Magnesium Chloride Application". Contractor is responsible for payment to the supplier, transportation and placement of magnesium chloride under this bid item. Price and payment shall constitute full compensation for furnishing all plant, labor, material and equipment, and performing all operations necessary for completion of the work specified in this Section.

**4.02 GENERAL DUST CONTROL**

- A. No separate measurement and payment will be made for dust control. The work specified in this Section related to dust control will be considered incidental to work specified in other sections.

**END OF SECTION**

## SECTION 01580

### PROJECT IDENTIFICATION AND SIGNS

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Furnish, install and maintain project identification sign which shall be located at the main project entrance
- B. Furnish, install and maintain asbestos waste disposal signs which shall be maintained at 300 foot intervals along the perimeter fence and at the gate to the asbestos landfill.
- C. Furnish, install and maintain and all other signs designated in this section and shown on the Drawings.

##### 1.02 RELATED REQUIREMENTS

- A. Section 01300 Submittals
- B. Section 02830 Fences and Gates

##### 1.03 REFERENCES

- A. Manual on Uniform Traffic Control Devices millennium edition, December 2000 (MUTCD 2000).
- B. 40 Code of Federal Regulations (CFR) 61.154.

##### 1.04 SUBMITTALS

- A. Prepare and submit a graphic representation of the signs to the CO/COTR within 15 days of Notice to Proceed.

##### 1.05 PROJECT IDENTIFICATION SIGN

- A. One painted sign, of not less than 32 square feet (3 square meters) area, with painted graphic content to include:
  - 1. Title of Project: Lincoln County Class IV Landfill Construction.
  - 2. Logo and Name of Government: U.S. Environmental Protection Agency
  - 3. Logo and Name of Contracting Officer: Volpe National Transportation Systems Center
  - 4. Name of Contracting Officer's Technical Representative
  - 5. Prime Contractor
  - 6. Point of Contact Phone Numbers

- B. Graphic design, style of lettering, and colors: As approved by the Government and applicable local regulations for signs.
- C. Erect on the site at a lighted location of high public visibility, adjacent to main entrance to site, as approved by the CO/COTR and the Government.

#### 1.06 ABESTOS NOTIFICATION SIGNS

- A. Signs, of not less than 20 inches by 14 inches, to be painted, lettered, and installed in accordance with 40 CFR 61.154.
- B. Signs shall be installed at 300 foot intervals along the asbestos landfill perimeter fence and gate.
- C. Sign painted with graphic content to include the following:  
  
Asbestos Waste Disposal Site  
Do Not Create Dust  
Breathing Asbestos is Hazardous to Your Health

#### 1.05 INFORMATIONAL SIGNS

- A. Painted signs with painted lettering, or standard products according to MUTCD 2000.
  - 1. Size of signs and lettering: As required by regulatory agencies, or as appropriate to usage.
  - 2. Colors: As required by regulatory agencies, otherwise of uniform colors throughout Project.
- B. Erect at appropriate locations to provide required information as designated on the Drawings.

#### 1.06 QUALITY ASSURANCE

- A. Sign Painter: Professional Experience in type of work required.
- B. Finishes and Painting: Adequate to resist weathering and fading for scheduled construction period.

### PART 2 PRODUCTS

#### 2.01 SIGN MATERIALS

- A. Structure and Framing: May be new or used, wood or metal, in sound condition structurally adequate to work and suitable for specified finish.
- B. Sign Surfaces: Exterior softwood plywood with medium density overlay, standard large sizes to minimize joints.
  - 1. Thickness: As required by standards to span framing members, to provide even, smooth surface without waves or buckles.

- C. Rough Hardware: Galvanized
- D. Paint: Exterior quality
  - 1. Use Bulletin colors for graphics.
  - 2. Colors for structure, framing, sign surfaces, and graphics: As selected by the CO/COTR.

### **PART 3 EXECUTION**

#### **3.01 PROJECT IDENTIFICATION SIGN**

- A. Paint exposed surfaces of supports, framing, and surface material; one coat of primer and one coat of exterior paint.
- B. Paint graphics in styles, sizes, and colors selected.

#### **3.02 MAINTENANCE**

- A. Maintain signs and supports in a neat, clean condition; repair damages to structure, framing, or sign.

### **PART 4 MEASUREMENT AND PAYMENT**

#### **4.01 MEASUREMENT**

- A. No separate measurement will be made to furnish, install and maintain the project identification, asbestos warning, and other signs.

#### **4.02 PAYMENT**

- A. Payment to furnish, install and maintain the project identification, asbestos warning, and other signs will be made at the Contract lump sum price for bid item "Signs." Price and payment shall constitute full compensation for furnishing all labor, material and equipment, and performing all operations necessary for completion of the work specified in this Section.

**END OF SECTION**

## SECTION 01600

### DELIVERY, STORAGE, AND HANDLING

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. This Section specifies the general requirements for the delivery handling, storage, and protection for all items required in the construction of the work. Specific requirements, if any, are specified with the related item.

##### 1.02 TRANSPORTATION AND DELIVERY

- A. Transport and handle items in accordance with manufacturer's instructions.
- B. Deliver products to the site in manufacturer's original sealed containers or other packing systems, complete with instructions for handling, storing, unpacking, protecting, and installing.
- C. All items delivered to the site shall be unloaded and placed in a manner which will not hamper the Contractor's normal construction operation or those of subcontractors and other Contractors and will not interfere with the flow of necessary traffic.
- D. Provide necessary equipment and personnel to unload all items delivered to the site.
- E. Promptly inspect shipment to assure that products comply with requirements, quantities are correct, and items are undamaged.

##### 1.03 STORAGE AND PROTECTION

- A. Store and protect products in accordance with the manufacturer's instructions, with seals and labels intact and legible. Storage instruction shall be studied by the Contractor and reviewed with the CO/COTR by him/her. Instruction shall be carefully followed and a written record of this kept by the Contractor. Arrange storage to permit access for inspection.
- B. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- C. All structural, miscellaneous, and reinforcing steel shall be stored off the ground or otherwise to prevent accumulations of dirt or grease and in a position to prevent accumulations of standing water and to minimize rusting.

**END OF SECTION**

## SECTION 01700

### CONTRACT CLOSEOUT

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:

1. Closeout procedures
2. Final cleaning
3. Adjusting
4. Project record documents

##### 1.02 RELATED WORK

- A. Warranties are included in Section 01740.

##### 1.03 RECORD DOCUMENTS

- A. Maintain on site, one set of the following documents; actual revisions to the Work shall be recorded in these documents:

1. Contract Drawings
2. Specifications
3. Addenda
4. Change Orders and other Modifications to the Contract

- B. Store Record Documents separate from documents used for construction.

- C. Record information concurrent with construction progress.

- D. Specifications: Legibly mark and record at each Product section description of actual products installed, including the following:

1. Manufacturer's name and product model and number.
2. Product substitutions or alternates utilized.
3. Changes made by Addenda and Modifications.

- E. Contract Drawings and Shop Drawings: Legibly mark each item to record actual construction including:

1. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
2. Field changes of dimension and detail.
3. Details not on original Contract Drawings.

#### 1.04 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for CO/COTR's inspection.
- B. Provide submittals to CO/COTR that are required by governing or other authorities.
- C. Submit Application for Final Payment identifying total adjusted contract sum, previous payments, and sum remaining due.

#### 1.05 FINAL CLEANING / REMOVALS

- A. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.
  1. Remove all construction related debris.
  2. Remove water and debris from the decon pad sump and transport and dispose of materials in the landfill cell.

**END OF SECTION**

## SECTION 01730

### OPERATION AND MAINTENANCE DATA

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. This Section includes procedural requirements for compiling and submitting operation and maintenance data require to complete the project.

##### 1.02 RELATED WORK

- A. Submittals are included in Section 01300.
- B. Contract closeout is covered in Section 01700.
- C. Warranties are covered in Section 01740.

##### 1.03 SERVICES OF MANUFACTURERS' REPRESENTATIVE

- A. Equipment furnished under Division 10 shall include the cost of a competent representative of the manufacturers of all equipment to supervise the installation, adjustment and testing of the equipment and to instruct the Government's operating personnel on operation and maintenance. This supervision may be divided into two or more time periods as required by the installation program or as directed by the CO/COTR.
- B. See the detailed specifications for additional requirements for furnishing the services of manufacturer's representatives.
- C. A certificate in the form attached to this Section, from the manufacturer and signed by Government's representative stating that the installation of the equipment is satisfactory, that the unit has been satisfactorily tested, is ready for operation and that the operating personnel have been suitably instructed in the operation, lubrication and care of the unit shall be submitted for each piece of equipment indicated above.

##### 1.04 OPERATING MANUALS

- A. Six complete sets of the final operation and maintenance instructions covering all equipment furnished under Division 10 shall be delivered directly to the CO/COTR. [One set of originals must be part of the six sets of operation and maintenance instructions required, including original manuals covering components manufactured by others.]
  - 1. The manual for each piece of equipment shall be a separate document with the following specific requirements:
    - a. Contents:
      - 1) Table of contents and index
      - 2) Brief description of each system and components



- 3) Starting and stopping procedures
- 4) Special operating instructions
- 5) Routine maintenance procedures
- 6) Manufacturer's printed operating and maintenance instructions, parts list, illustrations and diagrams
- 7) One copy of each wiring diagram
- 8) One copy of each approved shop drawing and each Contractor's coordination and layout drawing
- 9) List of spare parts, manufacturer's price, and recommended quantity
- 10) Name, address and telephone numbers of local service representatives.

b. Material

- 1) Loose leaf on 20 lb punched paper
- 2) Holes reinforced with plastic cloth or metal
- 3) Page size, 8-1/2-in by 11-in
- 4) Diagrams, illustrations, and attached foldouts as required, of original quality, reproduced by dry copy method
- 5) Covers: oil, moisture and wear resistant 9 by 12 size

c. Submittals to the CO/COTR

- 1) Three preliminary copies of manuals shall be submitted to the CO/COTR no later than 15 days following approval of the shop drawings for each piece of equipment. Provide six final copies of complete manuals prior to testing.

## 1.05 CONTENTS, EACH VOLUME

- A. Table of Contents: Provide title of project, names, addresses and telephone numbers of CO/COTR, subconsultants and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.
- B. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers; including local source of supplies and replacement parts.
- C. Product Data: Mark each sheet to clearly identify specific products and component parts and data applicable to installation. Delete inapplicable information.

- D. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- E. Type Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified.

#### 1.06 MANUAL FOR MATERIALS AND FINISHES

- A. Building Products, Applied Materials and Finishes: Include product data, with catalog number, size, composition and color and texture designations. Provide information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods and recommended schedule for cleaning and maintenance.
- C. Moisture Protection and Weather Exposed Products: Include product data listing, applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance and repair.
- D. Additional Requirements: As specified in individual product specifications.

#### 1.07 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. For each Item of Equipment and Each System provide the following:
  - 1. Overview of System and description of unit or system and component parts. Identify function, normal operating characteristics and limiting conditions. Include performance curves, with engineering data and tests and complete nomenclature and commercial number of replaceable parts.
  - 2. Panelboard Circuit Directories including electrical service characteristics, controls and communications and color coded wiring diagrams as installed.
  - 3. Operating Procedures: Include start-up, break-in and routine normal operating instructions and sequences; regulation, control, stopping, shut-down and emergency instructions; and summer, winter and any special operating instructions.
  - 4. Maintenance Requirements
    - a. Routine procedures and guide for trouble-shooting; disassembly, repair and reassemble instructions; and alignment, adjusting, balancing and checking instructions.
    - b. Servicing and lubrication schedule and list of lubricants required.
    - c. Manufacturer's printed operation and maintenance instructions. [One set of six operation and maintenance instructions required must be the originals.]

- d. Original manufacturer's parts list, illustrations, assembly drawings and diagrams required for maintenance.
5. Control diagrams by controls manufacturer as installed.
6. Contractor's coordination drawings, with color coded piping diagrams as installed.
7. Charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
8. List of original manufacturer's spare parts, current prices and recommended quantities to be maintained in storage.
9. Test and balancing reports as specified.
10. Additional Requirements: As specified in individual product specification.

**END OF SECTION**

EQUIPMENT MANUFACTURER'S CERTIFICATE OF INSTALLATION TESTING  
AND INSTRUCTION

Government: \_\_\_\_\_

Project: \_\_\_\_\_

Contract No. \_\_\_\_\_

CO/COTR No. \_\_\_\_\_

EQUIPMENT SPECIFICATION SECTION \_\_\_\_\_

EQUIPMENT DESCRIPTION \_\_\_\_\_

I \_\_\_\_\_, Authorized representative of  
(Print Name)

\_\_\_\_\_  
(Print Manufacturer's Name)

hereby CERTIFY that \_\_\_\_\_  
(Print equipment name and model with serial No.)

installed for the subject project [has] [have] been installed in a satisfactory manner, [has] [have] been satisfactorily tested, [is] [are] ready for operation, and that Government assigned operating personnel have been suitably instructed in the operation, lubrication, and care of the unit[s] on Date: \_\_\_\_\_ Time: \_\_\_\_\_

CERTIFIED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
(Signature of Manufacturer's Representative)

GOVERNMENT'S ACKNOWLEDGMENT OF MANUFACTURER'S INSTRUCTION

[I] [We] the undersigned, authorized representatives of the \_\_\_\_\_  
and/or Plant Operating Personnel have received classroom and hands on instruction on the operation, lubrication, and maintenance of the subject equipment and [am] [are] prepared to assume normal operational responsibility for the equipment:

\_\_\_\_\_  
DATE: \_\_\_\_\_

\_\_\_\_\_  
DATE: \_\_\_\_\_

\_\_\_\_\_  
DATE: \_\_\_\_\_

## SECTION 01740

### WARRANTIES AND FINAL GUARANTEE

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. This section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturers standard warranties on products, and special warranties.

##### 1.02 RELATED WORK

- A. Refer to Conditions of Contract for the general requirements relating to warranties and bonds.
- B. General closeout requirements are included in Section 01700 Contract Closeout.

##### 1.03 SUBMITTALS

- A. Submit written warranties to the Government prior to the date fixed by the CO/COTR for Substantial Completion. If the Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Government.
- B. When a designated portion of the Work is completed and occupied or used by the Government, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Government within 15 days of completion of that designated portion of the Work.
- C. When a special warranty is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Government for approval prior to final execution.
- D. Refer to individual sections of Divisions 2, 3, 10, 13, and 16 for specific content requirements, and particular requirements for submittal of special warranties.

##### 1.04 WARRANTIES

- A. All materials supplied under these Technical Specifications shall be warranted by the Contractor and the equipment manufacturers for a period of one year or for the normal routine warranty period for the materials, which ever is greater. Warranty period shall commence on the date of Government acceptance.
- B. The equipment shall be warranted to be free from defects in workmanship, design, and materials. If any part of the equipment should fail during the warranty period, it shall be replaced in the machine(s) and the unit(s) restored to service at no expense to the Government.

- C. Obtain equipment warranties from each of the respective suppliers or manufacturers for all the equipment specified under and Divisions 2, 3, 13, 15, and 16. The form of warranty is included at the end of this Section.
- D. The manufacturer's warranty period shall run concurrently with the Contractor's warranty or guarantee period. No exception to this provision shall be allowed. In the event that the manufacturer is unwilling to provide a one-year warranty commencing at the time of Government acceptance, obtain from the manufacturer a two-year warranty starting at the time of equipment delivery to the job site. This two-year warranty shall not relieve the Contractor of the one-year warranty starting at the time of Government acceptance of the equipment.

#### 1.05 WARRANTY REQUIREMENT

- A. **Related Damages and Losses:** When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.
- B. **Reinstatement of Warranty:** When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- C. **Replacement Cost:** Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Government has benefitted from use of the Work through a portion of its anticipated useful service life.
- D. **Government's Recourse:** Written warranties made to the Government are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Government can enforce such other duties, obligations, rights, or remedies.
- E. **Rejection of Warranties:** The Government reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.
- F. The Government reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.
- G. **Disclaimers and Limitations:** Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers and subcontractors required to countersign special warranties with the Contractor.

#### 1.06 FINAL GUARANTEE

- A. All work shall be guaranteed by the Contractor for a period of one year from and after the date of acceptance of the work by the Government.

- B. If, within the guarantee period, repairs or changes are required in connection with guaranteed work, which, in the opinion of the CO/COTR, is rendered necessary as the result of the use of materials, equipment, or workmanship which are inferior, defective, or not in accordance with the terms of the Contract, promptly upon receipt of notice from the Government and without expense to the Government, do the following:
1. Place in satisfactory condition in every particular all of such guaranteed work and correct all defects therein.
  2. Make good all damage to the building or site, or equipment, or contents thereof, which, in the opinion of the CO/COTR, is the result of the use of materials, equipment, or workmanship which are inferior, defective, or not in accordance with the terms of the Contract.
  3. Make good any work or material, or the equipment and contents of building, structure of site disturbed in fulfilling any such guarantee.
- C. If the Contractor, after notice, fails within 10 days to proceed to comply with the terms of this guarantee, the Government may have the defects corrected, and the Contractor and his/her surety shall be liable for all expense incurred, provided, however, that in case of an emergency where, in the opinion of the Government, delay would cause loss or damage, repairs may be started without notice being given to the Contractor and the Contractor shall pay the cost thereof.
- D. All special guarantees or warranties applicable to specific parts of the work, as may be stipulated in the Contract, Technical Specifications, or other papers forming a part of this Contract, shall be subject to the terms of this paragraph during the first year of life of each such guarantee. All special guarantees and manufacturers' warranties shall be assembled by the Contractor and delivered to the CO/COTR, along with a summary list thereof, before the acceptance of the work.

#### 1.07 DEFINITIONS

- A. Standard Product Warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Government.
- B. Special Warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Government.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

**PART 4 MEASUREMENT AND PAYMENT (NOT USED)**

**END OF SECTION**

## WARRANTY FOR EQUIPMENT ITEM

LOCATION OF PROJECT: \_\_\_\_\_

GOVERNMENT: \_\_\_\_\_

PROJECT NUMBER: \_\_\_\_\_

EQUIPMENT ITEM: \_\_\_\_\_

SECTION NO. AND ITEM NO.: \_\_\_\_\_

SUPPLIER: \_\_\_\_\_

SUPPLIERS ADDRESS: \_\_\_\_\_

The undersigned guarantees that the above equipment is of good merchantable quality, free from defects in material or workmanship, fully meets the type, quality, design, and performance requirements defined in the Contract and Technical Specifications of the above project, and that the equipment will in actual operation satisfactorily perform the functions for which installed.

The undersigned agrees to repair, replace, or otherwise make good, any defect in workmanship or materials in the above described equipment which may develop within a period of one year from the date of final acceptance by the Government of the above named project.

COMPANY \_\_\_\_\_

COMPANY ADDRESS \_\_\_\_\_

By \_\_\_\_\_

TITLE \_\_\_\_\_

SIGNED \_\_\_\_\_

DATE \_\_\_\_\_



## SECTION 02110

### CLEARING, GRUBBING, AND STRIPPING

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. The work necessary to remove all interfering or objectionable vegetative material from the designated areas of work as shown on the Drawings or designated in the Technical Specifications. Specifically, the areas involved are the sites for the Class IV landfill, sediment ponds, and access roads.
- B. The work and precautions necessary to preserve from injury or defacement all vegetation and existing objects designated to remain, as shown on the Drawings or as specified herein.

##### 1.02 RELATED WORK

- A. Section 02200 Earthwork - General
- B. Section 02231 Earthen/Granular Material

##### 1.03 SUBMITTALS

- A. The Contractor shall submit to the CO/COTR, as provided in Section 01300, information noted below.
  - 1. Submit one copy of all surveying data, volume calculations, and cross sections for the cleared, grubbed, and stripped area, including electronic and *CADD* file versions.
  - 2. Submit quantity surveys of all clearing, grubbing, and stripping operations.
  - 3. Quantity Surveys

Upon completion of clearing, grubbing, and stripping, the Contractor shall perform, plot, and submit quantity cross section surveys at a maximum of 50-foot intervals and all transitions and break points. All sections shall be taken at locations corresponding to the original surveys. They shall be plotted by the Contractor on a minimum scale of 1 inch equals 50 feet horizontally and 1 inch equals 5 feet vertically with the theoretical design cross sections and allowable grade tolerances superimposed thereon. Additionally, the Contractor shall perform, plot, and submit a longitudinal profile after stripping with shots taken at a maximum of 20-foot intervals.

#### PART 2 PRODUCTS

##### 2.01 GENERAL

- A. Provide all materials and equipment in suitable and adequate quantity and quality as required to accomplish the work shown and specified herein.

## **PART 3- EXECUTION**

### **3.01 GENERAL**

- A. All material from grubbing and stripping shall be placed in an onsite pile in a location to be determined by the CO/COTR and approved by Lincoln County. Material from grubbing shall be placed at the south end of the Class IV landfill area. The top 6-inches of stripped topsoil material shall be placed in the final cover soil stockpile as shown on the Drawings. Remaining material from stripping shall be stockpiled in the general use stockpile area as shown on the Drawings.
- B. The Contractor shall review with the CO/COTR the location, limits, and methods to be used prior to commencing the work under this Section.

### **3.02 CLEARING**

- A. There will be no trees (just tree stumps) located on the site that will require clearing. All clearing will be performed by Lincoln County prior to the start of Work.

### **3.03 GRUBBING**

- A. Except as otherwise directed, cut, grub, remove and dispose of all stumps, brush, shrubs, roots and any other objectionable material within the limits shown on the Drawings.
- B. Protect trees or groups of trees, designated by the CO/COTR to remain, from damage by all construction operations by erecting suitable barriers, or by other approved means. Clearing operations shall be conducted in a manner to prevent falling trees from damaging trees designated to remain.
- C. No stumps, trees, limbs, or brush shall be buried in any fills or embankments.

### **3.04 STRIPPING**

- A. Strip all areas within the limits of the landfill as shown on the Drawings and as approved by the CO/COTR.
- B. Stripping shall include the removal and disposal of all organic sod, grass, grass roots, and other objectionable material from the areas designated to be stripped. Avoid mixing topsoil with subsoil and stockpile topsoil in areas on the site as approved by the CO/COTR and Lincoln County. Topsoil shall be free from brush, trash, large stones and other extraneous material and protected in the stockpile location shown on the Drawings. The depth of stripping shall be 2 feet, unless otherwise approved by the CO/COTR.

### **3.05 DISPOSAL OF MATERIALS**

- A. All tree trunks, limbs, roots, stumps, brush, foliage, other vegetation and objectionable material shall be stockpiled on site in an area designated on the Drawings and approved by Lincoln County.
- B. Disposal of Strippings
  - 1. Vegetative matter shall be placed on site in an area designated on the Drawings and approved by Lincoln County.

2. The top 6-inches of stripped topsoil shall be segregated and stockpiled in the final cover soil stockpile designated on the Drawings if they meet the specification requirements as satisfactory material for final cover.
3. Remaining stripped soil shall be stockpiled in the general use stockpile as shown on the Drawings.

#### **PART 4 MEASUREMENT AND PAYMENT**

##### **4.01 CLEARING AND GRUBBING**

###### **A. Measurement**

1. Materials that are cleared and grubbed will be measured for payment by the acre. The basis for the measurement will be the surveyed area cleared and grubbed.

###### **B. Payment**

1. Payment for clearing and grubbing will be made at the acre for bid item "Clearing and Grubbing." Price and payment shall constitute full compensation for furnishing all plant, labor, equipment, and material, and performing all operations necessary for clearing and grubbing, and transporting, and all incidental costs thereto.

##### **4.02 STRIPPING**

###### **A. Measurement**

1. Materials that are stripped will be measured for payment at the in-place cubic yard, and quantities determined by the average end area method. The basis for the measurement will be the original cross sections taken prior to stripping and the final cross sections taken after stripping.

###### **B. Payment**

1. Payment for stripping will be made on the unit price for bid item "Stripping." Price and payment shall constitute full compensation for furnishing all plant, labor, equipment, and material, and performing all operations necessary for stripping, and transporting, and all incidental costs thereto.

**END OF SECTION**

## SECTION 02200

### EARTHWORK - GENERAL

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. This Section includes the work necessary for general earthwork.
- B. Furnish all labor, supervision, materials, equipment, tools, permits, and incidentals necessary to perform excavation and grading of the areas specified herein plus any additional excavation required for establishment of operations. The work as described under this Section shall include all excavation, backfilling, compacting, grading, and related work to construct the pre-engineered metal building for the scale house, the scale, the concrete decon pad, access roads, landfill cell, stormwater management features, and other site work requiring earthwork.
- C. During construction, excavation, filling, backfilling, and grading shall be performed in a manner and sequence that will minimize multiple handling of soil material.
- D. The Contractor shall examine the site and review the available monitoring well borings data and soil borings data, taking into consideration all conditions that may affect their work.
- E. The Contractor shall follow their safety, health, and emergency response procedures.
- F. Excavated soils will be stockpiled in the areas shown on the Drawings or otherwise directed by the CO/COTR as approved by Lincoln County.
- G. Government will conduct air sampling during excavation and other onsite activities. Dust control shall be maintained at all times.

##### 1.02 RELATED WORK

- A. Section 01300 Submittals
- B. Section 02110 Clearing, Grubbing and Stripping
- C. Section 02205 Access Roads
- D. Section 02210 Site Grading
- E. Section 02223 Backfilling and Compaction
- F. Section 02231 Earthen/Granular Material
- G. Section 02270 Erosion and Sedimentation Control
- H. Section 02271 Riprap
- I. Section 02618 Culverts

- J. Section 02713 Stormwater Management
- K. Section 03301 Concrete and Reinforcing Steel
- L. Section 13122 Self-Framing Metal Building Systems

#### 1.03 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM)
  - 1. ASTM D1557 – Standard Test Method for Laboratory Compaction Characteristics of Soil using Modified Efforts (56,000 ft-lbf/ft<sup>3</sup>) (2,700 kN-m/m<sup>3</sup>)
  - 2. ASTM D2922 – Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
  - 3. ASTM D3017 - Test Method for Water Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
  - 4. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as used in Engineering Design and Construction
- B. Occupational Safety and Health Administration (OSHA) 29 CFR Part 1926, Construction Industry.
- C. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

#### 1.04 SUBMITTALS

- A. The Contractor shall submit to the CO/COTR, as provided in Section 01300, information noted below.
  - 1. Submit one copy of all surveying data, volume calculations, and cross sections for the landfill cell excavation area, including electronic and *CADD* file versions.
  - 2. Submit quantity surveys of the excavation area.
  - 3. Quantity Surveys

Upon completion of excavation, the Contractor shall perform, plot, and submit quantity cross section surveys at a maximum of 50-foot intervals and all transitions and break points. All sections shall be taken at locations corresponding to the original surveys. They shall be plotted by the Contractor on a minimum scale of 1 inch equals 50 feet horizontally and 1 inch equals 5 feet vertically with the theoretical design cross sections and allowable grade tolerances superimposed thereon. Additionally, the Contractor shall perform, plot, and submit a longitudinal profile after backfilling with shots taken at a maximum of 20-foot intervals.

4. Submit two copies of all laboratory and field test reports within 24 hours of the completion of the test.

## 1.05 QUALITY ASSURANCE

- A. The CO/COTR will determine by observation and testing, the quality of work and materials during earthwork operations. The CO/COTR will verify: adequacy of site preparation; suitability of bearing material at excavation levels; acceptability of available fill material; and the correct placement and compaction of fill and backfill to specified densities. Stripping, excavating, filling, backfilling and compacting procedures require the CO/COTR's approval as they are performed. All work found unsatisfactory shall be corrected in an approved manner at no additional cost to the Government.
- B. In-place density may be tested by methods described in ASTM D2922 to ensure that the backfill and fill has been properly compacted.

## 1.06 DEFINITIONS

- A. Degree of Compaction: Degree of compaction shall be expressed as a percentage of maximum dry density determined by a tested procedure presented in ASTM D1557.
- B. Optimum Moisture Content: The maximum dry density for relative compaction. Field moisture content shall be determined on the basis of the soil fraction passing the 3/4-inch sieve.
- C. Prepared Ground Surface: The ground surface after clearing, grubbing, stripping, excavation, and scarification and/or compaction.
- D. Completed Course: A course or layer that is ready for the next layer or next phase of the work.
- E. Well-Graded: A mixture of particle sizes that has no specific concentration or lack of one or more sizes. Well-graded does not define any numerical value that must be placed on the coefficient of uniformity, coefficient of curvature, or other specific grain size distribution parameters. Well-graded is used to define a material type that, when compacted, produces a strong and relatively incompressible soil mass free from detrimental voids.
- F. Influence Area: The area within planes sloped downward and outward at an angle of 60 degrees from the horizontal from (a) 1 foot outside the outermost edge at the base of foundations or slabs; or (b) 1 foot outside the outermost edge at the surface of roadways or shoulder; or (c) 0.5 foot outside the exterior edge at the spring line of pipes and culverts.

## PART 2 PRODUCTS

### 2.01 GENERAL

- A. Provide all materials and equipment in suitable and adequate quantity and quality as required to accomplish the work shown and specified herein.
- B. Soils excavated for Landfill Cell A will be stockpiled for use as daily cover material for landfill operation.

- C. The top 6-inches of stripped topsoil will be stockpiled for use as final cover if they meet the requirements specified herein.
- D. All materials shall be in accordance with Section 02231.
- E. Concrete shall conform to Section 03301.

## 2.02 COMPACTION EQUIPMENT

- A. Compaction equipment shall be of suitable type and adequate to obtain the densities specified, and shall provide satisfactory breakdown of materials to form a dense fill. Smooth steel-wheeled rollers will not be permitted for compaction of cohesive material; it shall be compacted with pneumatic tire, tamping foot, or sheeps foot rollers unless the Contractor can demonstrate, to the satisfaction of the CO/COTR, that other equipment will produce satisfactory results.
- B. Compaction equipment shall be operated in strict accordance with the manufacturer's instructions and recommendations. Equipment shall be maintained in such condition that it will deliver the manufacturer's rated compactive effort. If specified densities are not obtained, larger and/or different types of additional equipment shall be provided by the Contractor. Hand-operated equipment shall be capable of achieving the specified densities.

## 2.03 MOISTURE CONTROL EQUIPMENT

- A. Equipment for applying water shall be of a type and quality adequate for the work, shall not leak, and shall be equipped with a pressurized distribution system to assure uniform application. Equipment for discing and drying out material shall consist of blades, discs, or other approved equipment.

# PART 3 EXECUTION

## 3.01 GENERAL

- A. No equipment shall be operated within 5 feet of existing wells. Any work that cannot be accomplished without endangering existing wells or other site facilities shall be performed with hand tools.

## 3.02 CLEARING, GRUBBING, AND STRIPPING

- A. Complete clearing, grubbing, and stripping work, as specified in the Section 02110, prior to beginning work in this Section.

## 3.03 EXCAVATION FOR ROADS

- A. Excavate to the lines shown on the Drawings and as specified.
- B. Road base course will be native common fill material as specified in Section 02231 which is in-place or obtained from locations on site as directed by the CO/COTR and approved by Lincoln County.
- C. Road surface course will be as specified in Section 02231.

### 3.04 EXCAVATION FOR LANDFILL CELL A

- A. Excavate to the depths and widths shown on the Drawings. Allow for working space and finish topsoil as shown or required. Excavation carried below the grade lines shown or established by the CO/COTR shall be replaced with the same fill material as specified for the overlying fill or backfill, and compacted as required for such overlying fill or backfill. Where the overlying area is not to receive fill or backfill, replace the over-excavated material and compact to a density not less than that of the underlying ground. Cuts below grade shall be corrected by similarly cutting adjoining areas and creating a smooth transition. Correct all over-excavated areas at the Contractor's sole expense.
- B. Soil shall be excavated from landfill Cell A to the dimensions and side-slopes as shown on the Drawings. Adequate excavated soil materials shall be placed in the Daily Cover Use Stockpile for use as daily cover soil during landfill operation. The remaining soils shall be placed in the General Use Stockpile.

### 3.05 COMPACTION

- A. Compact all materials by mechanical means. Flooding or jetting is prohibited. If compaction tests indicated that compaction or moisture content is not as specified, material placement shall be terminated and corrective action shall be taken by the Contractor prior to continued placement.

### 3.06 MOISTURE CONTROL

- A. During all compacting operations for the roads, decon pad, scale and scale house, maintain optimum practicable moisture content required for compaction purposes in each lift of fill. Maintain moisture content uniform throughout the lift. At the time of compaction, the moisture content of the material shall be at optimum moisture content,  $\pm 2$  percent points unless otherwise specified.
- B. Do not attempt to compact material that contains too little moisture. Insofar as practicable, add water to the material at the site of excavation. Supplement, if required, by sprinkling the fill.
- C. Do not attempt to compact material that contains excessive moisture. Aerate material by blading, discing, harrowing, or other methods, to hasten the drying process.

### 3.08 DISPOSAL OF EXCESS EXCAVATION

- A. Dispose of all excess excavation, not required or suitable for use as daily cover or final cover topsoil layer onsite, in the General Use Stockpile. Conform to the Section 02210, uniformly grade excess material to conform to existing contours, leave with a neat appearance, and in free-draining condition.

### 3.09 PLACING TOPSOIL

- A. Topsoil shall be stockpiled in the location shown on the Drawings for use as final landfill cover as specified in Section 02110.

### 3.10 SITE GRADING



- A. See the Section 02210.

### 3.11 DUST CONTROL

- A. Provide a minimum 1,000 gallon capacity water truck to control dust during construction.

### 3.12 TESTING

- A. Testing shall be the responsibility of the Contractor and shall be performed at no additional cost to the Government.
- B. Testing Facilities: Tests shall be performed by an approved commercial testing laboratory or may be tested by the Contractor subject to approval.
- C. Testing of Backfill Materials: Characteristics of backfill materials shall be determined. A minimum of one particle size analysis and one moisture-density relation test shall be performed on each different type of material used for backfill for every 1,500 cy of material placed. One particle size analysis and one moisture-density relation test each shall be performed of the compacted material for the decon pad, scale, and scale house.
- D. Field Density Tests
  - 1. Tests shall be performed in sufficient numbers to ensure that the specified density is being obtained.
  - 2. For the road base course, perform field density testing every 500-feet of road.
  - 3. For the compacted material for the decon pad, scale, and scale house pad, perform three field density tests per lift of backfill material.
  - 4. Backfilled areas improperly compacted shall be recompact and tested to the density specified at no additional cost to the Government.

## PART 4 MEASUREMENT AND PAYMENT

### 4.01 EXCAVATION OF LANDFILL CELL A

#### A. Measurement

- 1. Materials that are excavated from landfill Cell A will be measured for payment by the in-place cubic yard, and quantities determined by the average end area method. The basis for the measurement will be the original cross sections taken prior to excavation, and the final cross sections taken after excavation.

#### B. Payment

- 1. Payment for excavation of landfill Cell A will be made at the in-place cubic yard for the "Excavation of Landfill Cell A." Price and payment shall constitute full compensation for furnishing all labor, equipment, and material, and performing all operations necessary for the excavation of landfill Cell A, and all incidental costs thereto.

#### 4.02 ALL OTHER GENERAL EARTHWORK

- A. No separate measurement and payment will be made for any earthwork specified in this Section except for the excavation of landfill Cell A. All work specified in this Section except the excavation of landfill Cell A will be considered incidental to the work specified in other sections.

**END OF SECTION**

## SECTION 02205

### ACCESS ROADS

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Construction of the temporary and permanent access roads as shown on the Drawings and specified herein.

##### 1.02 RELATED WORK

- A. Section 01300 Submittals
- B. Section 02200 Earthwork – General
- C. Section 02223 Backfilling and Compaction
- D. Section 02231 Earthen/Granular Materials

##### 1.03 REFERENCE STANDARDS

- A. Montana Department of Transportation (MDT). *Standard Specifications for Road and Bridge Construction* (MDTSS). 1995 Edition.
  - 1. Division 200, Earthwork
  - 2. Division 300, Aggregate Surfacing and Base Courses

##### 1.04 SUBMITTALS

- A. The Contractor shall submit to the CO/COTR, as provided in the Section 01300, information as noted below.
- B. Materials

Submit type of aggregate surface course material to be used, source of the material, and test results certifying that it meets the requirements specified.

##### 1.05 WEATHER LIMITATIONS

- A. Aggregate surface courses shall not be constructed when the ambient temperature is below 35°F and on subgrades that are frozen or contain frost. It shall be the responsibility of the Contractor to protect, by approved method or methods, all areas of surfacing that have not been accepted by the CO/COTR. Surfaces damaged by freeze, rainfall, or other weather conditions shall be brought to a satisfactory condition by the Contractor.

#### PART 2 PRODUCTS

##### 2.01 GENERAL

- A. Provide all materials and equipment in suitable, adequate quantity, and quality as required to accomplish the work shown and specified herein.

## 2.02 COMMON FILL BASE COURSE AND AGGREGATE SURFACE COURSE

- A. Refer to Section 02231.

## PART 3 EXECUTION

### 3.01 GENERAL

- A. Access roads shall be provided at the outset and during the course of the project as indicated on the Drawings, and specified herein. Haul roads required by the Contractor shall be provided, subject to the approval of the CO/COTR, at no additional cost.
- B. Access roads shall be sufficiently durable to withstand all construction traffic during the construction project with minimal maintenance.
- C. All roadways and work areas shall be constructed to maintain linear grade as shown on the Drawings and maintained in good condition as required throughout the progress of the work.
- D. Roads shall be of the radius and width shown on the Drawings to accommodate all equipment expected to be used at the site.
- E. Sufficient advance warning signs, lights, cones, barricades, and other approved safety devices shall be provided in accordance with specifications established by the MDT.

### 3.02 SUBGRADE PREPARATION

- A. The subgrade for access roads shall be prepared in accordance with MDTSS, Division 200 - Earthwork, and Sections 02200 and 02223.
- B. The access roads subgrade shall be a minimum 12-inches of compacted common fill with a 3 percent slope from a center crown to allow for drainage, or as otherwise specified. The subgrade shall be compacted to at least 90 percent maximum density as determined by ASTM D1557 (Modified Proctor).

#### **Finalize during Geotechnical Investigation**

- C. Continued use of sections of prepared subgrade for hauling, so as to cut up or deform it from the true cross section, is prohibited. Protect the prepared subgrade from traffic.
- D. Maintain in the finished condition until the first succeeding course is placed.

### 3.04 AGGREGATE SURFACE COURSE

- A. The Contractor shall construct the surface courses for the access roads in accordance with the specifications established by MDT and described in Section 02231, unless otherwise defined herein. The access roads shall be surfaced with a minimum of 2-inches of compacted aggregate surface course and slope 3 percent from a center crown to allow for drainage, or as otherwise specified.

- B. Place and compact aggregate surface course over compacted subgrade for access roads. Shape, smooth, and compact to at least **95** percent maximum density as determined by ASTM D1557 (Modified Proctor).

**Finalize during Geotechnical Investigation**

**3.03 CLEANUP**

- A. Clean up all debris and unused materials from the construction of the access road and parking areas, and dispose of such materials at an approved location in accordance with all local laws, codes, and ordinances.

**3.04 MAINTENANCE**

- A. The access roads and shall be maintained in a safe and functional condition.

**PART 4 MEASUREMENT AND PAYMENT**

**4.01 MEASUREMENT AND PAYMENT**

- A. No separate measurement will be made for all work specified in this Section. The work specified in this Section will be considered incidental to work specified in other sections.

**END OF SECTION**

## **SECTION 02210**

### **SITE GRADING**

#### **PART 1 GENERAL**

##### **1.01 SCOPE OF WORK**

- A. This Section includes the work necessary for general site grading as shown on the Drawings and specified herein.

##### **1.02 RELATED WORK**

- A. Section 02110 Clearing, Grubbing, and Stripping
- B. Section 02200 Earthwork - General
- C. Section 02223 Backfilling and Compaction
- D. Section 02231 Earthen/Granular Materials
- E. Section 02713 Stormwater Management

#### **PART 2 PRODUCTS**

##### **2.01 GENERAL**

- A. Provide all materials and equipment in suitable and adequate quantity as required to accomplish the work shown and specified herein.

##### **2.02 COMMON FILL**

- A. See Common Fill as specified in Section 02231.

#### **PART 3 EXECUTION**

##### **3.01 FINISHED EXCAVATION AND FILLS**

- A. All areas covered by the project, including excavated and filled sections and adjacent transition areas, shall be uniformly smooth-graded. The finished surface shall be reasonably smooth, compacted, and free from irregular surface changes. The degree of finish shall be that ordinarily obtainable from blade-grader operations, except as otherwise specified. Ditches and gutters shall be finished to permit adequate drainage. The surface of excavated areas for road construction or other areas on which a surface course is to be placed shall vary not more than  $\pm 0.10$  foot from the established grade and approved cross section. Surfaces shall be finished not more than  $\pm 0.30$  foot above or below the established grade or approved cross section.

##### **3.02 DITCHES AND CHANNEL CHANGES**

- A. Ditches and channel changes shall be cut accurately to the cross sections and grades indicated on the Drawings. All roots, stumps, rock, and foreign matter in the sides and

bottom of ditches and channel changes shall be trimmed and dressed or removed to conform to the slope, grade, and shape as required. Care shall be taken not to excavate ditches below the grades as indicated on the Drawings. Excessive ditch and gutter excavation shall be backfilled and thoroughly compacted to grade with satisfactory material. All ditches excavated under this Section shall be maintained until final acceptance of the work. Satisfactory material excavated from ditches and channel changes shall be placed in fill areas. Unsatisfactory and excess excavated material shall be disposed of in accordance with directions in paragraph 3.04, "Disposal of Excess Excavation" of this Section. No excavated material shall be deposited closer to the edges of the ditches than 3 feet.

### **3.03 PROTECTION**

- A. Newly graded areas shall be protected from traffic and from erosion, and any settlement or washing away that may occur from any cause, prior to acceptance, shall be repaired and grades reestablished to the required elevations and slopes. All work shall be conducted in accordance with the environmental protection requirements of the contract.

### **3.04 DISPOSAL OF EXCESS EXCAVATION**

- A. Uniformly grade excess material to conform to existing contours, leave with a neat appearance, and in free-draining condition.

## **PART 4 MEASUREMENT AND PAYMENT**

### **4.01 MEASUREMENT AND PAYMENT**

- A. No separate measurement and payment will be made for all work specified in this Section. All work specified in this Section will be considered incidental to the work specified in other sections.

**END OF SECTION**

## SECTION 02223

### BACKFILLING AND COMPACTION

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Furnish all labor, materials, and incidentals necessary to perform all backfilling and compaction activities including roads, scale, scale house, stormwater features, and decon pad areas.
- B. Government will conduct air sampling during excavation and other onsite activities. Dust control shall be maintained at all times.

##### 1.02 RELATED WORK

- A. Section 01300 Submittals
- B. Section 02205 Access Roads
- C. Section 02200 Earthwork – General
- D. Section 02210 Site Grading
- E. Section 02231 Earthen/Granular Materials
- F. Section 02713 Stormwater Management
- G. Section 03301 Concrete and Reinforcing Steel
- H. Section 10880 Truck Scale and Appurtenances
- I. Section 13122 Self-Framing Metal Building Systems
- J. Section 13200 Underground Polyethylene Storage Tank

##### 1.03 SUBMITTALS

- A. The Contractor shall submit to the CO/COTR, as provided in Section 01300, information noted below.
  - 1. Submit one copy of all surveying data, volume calculations, and cross sections for each backfill area, including electronic and *CADD* file versions.
  - 2. Submit quantity surveys of all backfill operations.



3. Quantity Surveys

Upon completion of backfilling operations, the Contractor shall perform, plot, and submit quantity cross section surveys at a maximum of 50-foot intervals and all transitions and break points. All sections shall be taken at locations corresponding to the original surveys. They shall be plotted by the Contractor on a minimum scale of 1 inch equals 50 feet horizontally and 1 inch equals 5 feet vertically with the theoretical design cross sections and allowable grade tolerances superimposed thereon. Additionally, the Contractor shall perform, plot, and submit a longitudinal profile after backfilling with survey points taken at a maximum of 20-foot intervals.

4. Submit two copies of all laboratory and field test reports within 24 hours of the completion of the test.

1.04 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM)
1. ASTM D1557 – Standard Test Method for Laboratory Compaction Characteristics of Soil using Modified Efforts (56,000 ft-lbf/ft<sup>3</sup>) (2,700 kN-m/m<sup>3</sup>)
- B. Occupational Safety and Health Administration (OSHA)
1. 29 CFR 1926 - Construction Industry
  2. 40 CFR 1910
- C. Montana Department of Transportation (MDOT). *Standard Specifications for Road and Bridge Construction* (MDOTSS). 1995.
- D. Montana Public Works Standard Specifications (MPWS).
- E. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.05 DEFINITIONS

- A. Degree of Compaction - Degree of compaction shall be expressed as a percentage of maximum dry density determined by a tested procedure presented in ASTM D1557.

**PART 2 PRODUCTS**

2.01 COMMON FILL MATERIALS

- A. Common fill materials shall come from onsite sources, specifically overburden excavated from landfill cell excavation and excess soils from the grading of roads and construction of stormwater trenches. Common fill materials shall meet the common fill material requirements specified in Section 02231.

2.02 AGGREGATE SURFACE COURSE

- A. Aggregate surface course used for the construction of the roads shall be in accordance

with Section 02231.

## **PART 3 EXECUTION**

### **3.01 GENERAL**

- A. Survey site immediately after completing the backfilling and compacting operations in conformance with this Section.

### **3.02 SITE ACCESS ROADS**

#### **A. Backfilling**

1. No common fill material shall be placed or spread while the ground or fill is frozen or thawing or during unfavorable weather conditions.
2. Common fill material base course will be excess native soil material from grading of the road base course or from another local source designated by CO/COTR and approved by Lincoln County.
3. Road surface course shall be 2-inches of crushed aggregate surface course as specified in Section 02231.

#### **B. Compaction**

1. 12-inch road base course shall be compacted to **90%** compaction.
2. 2-inch road surface course shall be compacted to **95%** compaction.

**Finalize during Geotechnical Investigation**

### **3.03 SCALE, SCALE HOUSE AND DECON PAD**

#### **A. Backfilling and Compaction**

1. Compact subgrade prior to installing decon pad, scale, scale house and concrete areas.
2. Compact subgrade to not less than **95** percent maximum density as determined by ASTM D1557 (Modified Proctor).

**Finalize during Geotechnical Investigation**

### **3.04 GRADING**

- A. The backfilled areas shall be rough graded prior to road, scale, scale house, and decon pad construction.

### **3.05 TESTING**

- A. Testing shall be the responsibility of the Contractor and shall be performed at no additional cost to the Government.

1. Testing Facilities - Tests shall be performed by an approved commercial testing laboratory or may be tested by the Contractor subject to approval.

**B. Field Density Tests**

1. Tests shall be performed in sufficient numbers to ensure that the specified density is being obtained.
2. For the road base course, perform field density testing every 500-feet of road.
3. For the compacted material for the decon pad, scale, and scale house pad, perform three field density tests per lift of backfill material.
4. Backfilled areas improperly compacted shall be recompact and tested to the density specified at no additional cost to the Government.

**PART 4 MEASUREMENT AND PAYMENT**

**4.01 SITE ACCESS ROADS**

**A. Measurement**

Soil materials that are placed, backfilled, and compacted for the access roads base course will be measured for payment by square yard. The basis for payment will be the surveyed area of road base course compacted.

**B. Payment**

Payment for placing, backfilling, and compacting soil materials for the access roads will be made at the square yard for bid item "Prepare Road Base Course." Price and payment shall constitute full compensation for furnishing all plant, labor, equipment, and material, and performing all operations necessary for transporting, backfilling, compacting, and all incidental costs thereto.

**4.02 ALL OTHER BACKFILL AND COMPACTION WORK**

- A. No separate measurement and payment will be made for all work specified in this Section for backfill and compaction work other than the preparation of the roads base course. All work specified in this Section except the preparation of the roads base course will be considered incidental to the work specified in other sections.

**END OF SECTION**

## SECTION 02231

### EARTHEN/GRANULAR MATERIALS

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. This Section includes the requirements for earthen or granular materials. Uses of these materials is in other sections.

##### 1.02 RELATED WORK

- A. Section 01300 Submittals
- B. Section 02110 Clearing, Grubbing, and Stripping
- C. Section 02200 Earthwork – General
- D. Section 02205 Access Roads
- E. Section 02210 Site Grading
- F. Section 02223 Backfilling and Compaction
- G. Section 02270 Erosion and Sedimentation Control
- H. Section 02271 Riprap
- I. Section 13200 Underground Polyethylene Storage Tank

##### 1.03 REFERENCES

- A. Montana Department of Transportation (MDOT). *Standard Specifications for Road and Bridge Construction* (MDOTSS). 1995.
- B. Montana Public Works Standard Specifications (MPWS).
- C. The references current as of the date of bid opening shall apply.

##### 1.04 SUBMITTALS

- A. The Contractor shall submit to the CO/COTR, as provided in Section 01300 information as noted below.
  - 1. Certificates, test results, and sources for all material.

##### 1.05 MATERIAL ACCEPTANCE

- A. All tests necessary to certify that each material conforms to the specification and or certificates to locate an acceptable source of each type material shall be made by the Contractor along with copies of the test results from a qualified commercial testing

laboratory, shall be submitted to the CO/COTR for approval at least 30 days before the material is required for use or as specified. All material samples shall be furnished by the Contractor at the Contractor's sole expense. Samples shall be representative and be clearly marked to show the source of the material and the intended use on the project. Notify the CO/COTR at least 48 hours prior to sampling. The CO/COTR may, at the CO/COTR's option, observe the sampling procedures. No imported materials shall be delivered to the site until the proposed source and materials tests have been tentatively accepted in writing by the CO/COTR. All testing for acceptance will be performed by the Contractor and witnessed by the CO/COTR.

- B. If tests by the Contractor or the CO/COTR indicate that the material does not meet Specification requirements, material placement shall be terminated until corrective actions are taken. Material that does not conform to the Specification requirements and is placed in the work shall be removed and replaced at the Contractor's sole expense.

## **PART 2 PRODUCTS**

### **2.01 UNSATISFACTORY MATERIALS**

- A. Unsatisfactory materials shall be materials that do not comply with the requirements of this Section. Unsatisfactory materials include those materials containing roots and other organic matter, trash, debris, frozen materials, and stones larger than 3 inches, and materials classified in ASTM D2487, as PT, OH, CH, and OL.

### **2.02 COMMON FILL**

- A. Common fill materials shall consist of local, on-site materials from borrow sources or from required excavation that have maximum particle size less than 3 inches, are free from excess moisture, organic matter, and debris.

### **2.03 STRUCTURAL FILL**

- A. Structural fill shall be crushed rock consisting of sound, durable pieces, angular in shape, and free of any foreign material, structural defects, and chemical decay. It shall conform to the following gradation limits:

<u>Sieve Size</u>	<u>Percent Finer by Weight</u>
1-inch	100
¾-inch	90
½-inch	60
¼-inch	25

### **2.04 SELECT GRANULAR MATERIAL**

- A. Select granular material shall consist of well-graded sand, gravel, crushed gravel, or crushed stone composed of hard, tough and durable particles, and shall contain not more than 10 percent by weight of material passing a No. 200 mesh sieve and no less than 95

percent by weight passing the 1-inch sieve and a uniformity coefficient between 2 and 3.5.

2.05 ONE-INCH MINUS GRAVEL

- B. One-inch minus gravel shall be material screened to 1-inch minus with not more than 15 percent by weight passing the U.S. No. 200 sieve.

2.06 GRANULAR ROCK

- A. Granular rock shall be well graded with a maximum size of 1½-inches and a minimum size of ¼-inch.

2.07 AGGREGATE SURFACE COURSE

- A. Aggregate surface courses shall be in accordance with specifications established by MDOTSS. Surface course shall be crushed top surfacing Type "B," Grade 2 per Section 701, Aggregates (Table 701-9).

2.08 DRAINAGE MATERIAL

- A. Drainage Material

Drainage media shall be of well-graded inorganic noncalcareous material, free from organic substance and other deleterious matter with a minimum permeability ( $K_{MIN}$ ) of  $1 \times 10^{-3}$  cm/sec at 90 percent of Standard Proctor density, ASTM D698.

Drainage materials shall be furnished by the Contractor and shall conform to the following gradations (ASTM C33):

<u>Standard Sieve Size</u>	<u>Percentage Passing</u>
1-inch	100
No. 4	95 - 100
No. 8	80 - 100
No. 16	50 - 85
No. 30	25 - 60
No. 50	5 - 30
No. 100	0 - 10
No. 200	0

2.09 TYPE 1 PIPE BEDDING

- A. Refer to MPWS Section 02221 (Trench Excavation and Backfill for Pipelines and Appurtenant Structures).

2.10 TYPE 2 PIPE BEDDING

- A. Refer to MPWS Section 02221.

## 2.11 TOPSOIL

- A. Selected topsoil obtained from stripping as specified in Section 02210 may be used provided it is properly stored and protected, and provided that ground grubbings are thoroughly mixed into the material. Topsoil shall be free from roots, sticks, hard clay, and stones that will not pass through a 1-inch square opening. Remove existing vegetation before topsoil is excavated. Provide additional imported topsoil as specified herein to accomplish the work.

## PART 3 EXECUTION (NOT USED)

## PART 4 MEASUREMENT AND PAYMENT

### 4.01 OTHER EARTHEN AND GRANULAR MATERIALS

- A. No separate measurement and payment will be made for the use of earthen and granular materials other than road surface course. The work specified in this Section related to earthen and granular materials other than road surface course will be considered incidental to work specified in other sections.

### 4.02 ROAD SURFACE COURSE

- A. Measurement

Measurement of bid item "Road surface course" will be in tons based upon submittal of accurate and concise bills from the fill or gravel supplier. Each truck will be weighed on a certified scale, loaded with fill or gravel and weighed full. Contractor will obtain a load ticket showing the truck number, weights, date and time the truck was loaded. Copies of all load tickets will be submitted to CO/COTR. The Contractor must provide written proof that the supplier is utilizing a current Montana Department of Transportation (MDT) certified scale. The Government reserves the right to verify load weights on an independent certified scale. If the load weights measured by the independent scale are more than 5 percent less than the load weights measured by the original scale, the Government may direct that the independent scale be used as the basis for measuring load weights for that load and all subsequent loads, without change in the Contract Price. Government's determination to use the independent scale for measurement is subject to the informal dispute resolution process of the General Conditions.

- B. Payment

Payment will be made for the gravel installation per ton at the contract unit price for "Road surface course." Contractor is responsible for payment to the supplier, transportation and placement of fill or gravel under this bid item. Contractor will have daily weigh tickets in vehicles at all times.

**END OF SECTION**

## SECTION 02270

### EROSION AND SEDIMENTATION CONTROL

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and perform all installation, maintenance, removal and area cleanup related to erosion and sedimentation control work as shown on the Drawings and as specified herein. The work shall include, but not necessarily be limited to; installation of erosion control fences and straw bale barriers, sediment removal and disposal, removal of temporary devices, and final cleanup.

##### 1.02 RELATED WORK

- A. Section 02200 Earthwork - General
- B. Section 02713 Stormwater Management

##### 1.03 REFERENCES

- A. Montana Department of Transportation (MDOT). *Standard Specifications for Road and Bridge Construction* (MDOTSS). 1995.
- B. Montana Public Works Standard Specifications (MPWS).
- C. The references current as of the date of bid opening shall apply.

##### 1.04 SUBMITTALS

- A. Submit, in accordance with Section 01300, within 10 days after award of Contract, technical product literature for all commercial products to be used for erosion and sedimentation control.

##### 1.04 QUALITY ASSURANCE

- A. Be responsible for the timely installation and maintenance of all sedimentation control devices necessary to prevent the movement of sediment from the construction site to off site areas or into the stream system via surface runoff or underground drainage systems. Measures in addition to those shown on the Drawings necessary to prevent the movement of sediment off site shall be installed, maintained, removed, and cleaned up at the expense of the Contractor. No additional charges to the Government will be considered.

#### PART 2 PRODUCTS

##### 2.01 MATERIALS

- A. Erosion Control Fence shall be a prefabricated commercial product made of a woven, polypropylene, ultraviolet resistant material.



- B. Straw bales shall be comprised of baled straw of oats, wheat, barley, or rye that is certified free from noxious weeds, as well as free of mold or other objectionable material.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

#### **A. Sediment Fence Installation**

1. Sediment fences shall be positioned on the down-slope side of all soil stockpiles and other locations as indicated on the Drawings and as necessary to prevent off site movement of sediment produced by construction activities as directed by the CO/COTR.
2. Dig trench approximately 6-in wide and 6-in deep along proposed fence lines.
3. Drive stakes, 8-ft on center (maximum) at back edge of trenches. Stakes shall be driven 2-ft (minimum) into ground.
4. Hang filter fabric on posts carrying to bottom of trench with about 4-in of fabric laid across bottom of trench. Stretch fabric fairly taut along fence length and maintain secure both ways.
5. Backfill trench with excavated material and tamp.
6. Install pre-fabricated silt fence according to manufacturer's instructions.
7. **Straw Bale Barrier Installation**
8. Straw bale barriers shall be installed at 300 foot intervals within the stormwater drainage ditches as shown on the Drawings.
9. Dig a trench approximately one-third of the bale's height, install the rows of bales and backfill the bales on the uphill side.
10. Secure each bale with a minimum of two stakes per bale.
11. Stakes shall be 2-inch by 2-inch by 3-foot long.
12. Install straw bale barrier such that the bottom of the end bales is higher than the top of the lowest center bale.

### **3.02 MAINTENANCE AND INSPECTIONS**

#### **A. Inspections**

1. Make a visual inspection of all erosion and sedimentation control devices once per week and promptly after every rainstorm. If such inspection reveals that additional measures are needed to prevent movement of sediment to offsite areas, promptly install additional devices as needed. Sediment controls in need of maintenance shall be repaired promptly.

**B. Device Maintenance**

**1. Sediment Control Fences**

- a. Remove accumulated sediment once it builds up to 1/2 of the height of the fabric.
- b. Replace damaged fabric, or patch with a 2-ft minimum overlap.
- c. Make other repairs as necessary to ensure that the fence is filtering all runoff directed to the fence.

**2. Straw Bale Barriers**

- a. Remove accumulated sediment once it builds up to 1/2 of the height of the bales.
- b. Repair or replace damaged, under-cut, or end run bales.
- c. Make other repairs as necessary to ensure that the fence is filtering all runoff in the drainage ditches.

**3.05 REMOVAL AND FINAL CLEANUP**

- A. Once the site has been fully stabilized against erosion, remove sediment control devices and all accumulated silt. Dispose of silt and waste materials in proper manner. Regrade all areas disturbed during this process and stabilize against erosion with surfacing materials as indicated on the Drawings.

**PART 4 MEASUREMENT AND PAYMENT**

**4.01 MEASUREMENT**

- A. No separate measurement will be made for erosion and sedimentation control.

**4.02 PAYMENT**

- A. Payment for all erosion and sedimentation control will be made at the Contract lump sum price for bid item "Erosion and Sedimentation Control." Price and payment shall constitute full compensation for furnishing all plant, labor, material and equipment, and performing all operations necessary for completion of the work specified in this Section.

**END OF SECTION**

## SECTION 02271

### RIPRAP

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and place riprap and appurtenances as shown on the Drawings and as specified herein.

##### 1.02 RELATED WORK

- A. Section 02200 Earthwork - General
- B. Section 02231 Earthen/Granular Material
- C. Section 02713 Stormwater Management

##### 1.03 REFERENCES

- A. Montana Department of Transportation (MDOT). *Standard Specifications for Road and Bridge Construction* (MDOTSS). 1995.
- B. Montana Public Works Standard Specifications (MPWS).
- C. The references current as of the date of bid opening shall apply.

##### 1.04 SUBMITTALS

- A. Submit to the CO/COTR, as provided in Section 01300, shop drawings showing layout and details of and method of construction and installation of the riprap.
- B. The Contractor shall submit to the CO/COTR, as provided in Section 01300, certificates, test results, and sources for all material.

##### 1.05 MATERIAL ACCEPTANCE

- A. All tests necessary to certify that each material conforms to the specification and or certificates to locate an acceptable source of each imported material shall be made by the Contractor along with copies of the test results from a qualified commercial testing laboratory, shall be submitted to the CO/COTR for approval at least 30 days before the material is required for use or as specified. All material samples shall be furnished by the Contractor at the Contractor's sole expense. Samples shall be representative and be clearly marked to show the source of the material and the intended use on the project. Notify the CO/COTR at least 48 hours prior to sampling. The CO/COTR may, at the CO/COTR's option, observe the sampling procedures. No imported materials shall be delivered to the site until the proposed source and materials tests have been accepted in writing by the CO/COTR. All testing for acceptance will be performed by the Contractor and witnessed by the CO/COTR.
- B. Material that does not conform to the Specification requirements and is placed in the work

shall be removed and replaced at the Contractor's sole expense..

## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. Riprap used for channel and slope protection shall be hard, durable, angular in shape, resistant to weathering and may be naturally occurring particles or fragments of natural stone. Control of gradation shall be by visible inspection. Rounded stones, boulders, sandstone, or similar soft stone or relatively thin slabs will not be acceptable. Stone shall be free from overburden, spoil, shale and organic material. Each stone shall weigh not less than 50 lbs nor more than 125 lbs and at least 75 percent of the volume shall consist of stones weighing not less than 75 lbs each. The remainder of the stones shall be so graded that when placed with the larger stones the entire mass will be compact.
- B. A drainage material gravel base shall be placed and graded to a depth of 12-in to obtain a continuous uninterrupted bed of the required thickness within the required limits. See Section 02231 for drainage material. It shall be compacted as specified in Paragraph 3.01 below.
- C. Riprap shall be placed and graded off in a manner to ensure that the larger rock fragments are uniformly distributed and that the smaller rock fragments serve to fill the spaces between the larger rock fragments in a manner that will result in a compact mass of stone of the specified thickness. Hand placing will be required only to the extent necessary to secure the results specified above.
- D. Riprap shall have a minimum placed thickness of 12-in with individual pieces at the surface having a maximum deviation of plus or minus 2-in.
- E. Placing of riprap in layers or by dumping into chutes or by similar methods to cause segregation will not be permitted.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. The construction methods, compaction equipment, and appurtenances for drainage material shall be in accordance with [Section 613, Riprap and Slope and Bank Protection, from the MDT, Standard Specifications for Road and Bridge construction, dated 1995].
- B. Place riprap and drainage material base to the limits and grades shown on the Drawings.

## **PART 4 MEASUREMENT AND PAYMENT**

### **4.01 MEASUREMENT**

- A. No separate measurement will be made for the purchase and installation of riprap.

### **4.02 PAYMENT**

- A. Payment for the purchase and installation of riprap will be made at the Contract lump sum price for bid item "Stormwater Management." Price and payment shall constitute full compensation for furnishing all plant, labor, material and equipment, and performing all

operations necessary for completion of the work specified in this Section.

**END OF SECTION**

## SECTION 02618

### CULVERTS

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment, and incidentals necessary to install culverts as shown on the Drawings and as specified herein. The type of culverts specified are corrugated metal pipe (CMP).

##### 1.02 RELATED WORK

- A. Section 01300 Submittals
- B. Section 02200 Earthwork - General
- C. Section 02713 Stormwater Management

##### 1.03 SUBMITTALS

- A. Submit to the CO/COTR, as provided in Section 01300, shop drawings showing layout and details of and method of construction and installation of the pipe.
- B. Before fabrication of the pipe is begun, submit for approval a schedule of pipe lengths for the entire job. All pipe furnished under the Contract shall be fabricated in full accordance with the AASHTO Standards.

##### 1.04 REFERENCE STANDARDS

- A. American Association of State Highways and Transportation Officials (AASHTO)
  - 1. AASHTO M36 - Interim Specification for Corrugated Steel Pipe, Metallic Coated for Sewers and Drains.
  - 2. AASHTO M246 - Standard Specifications for Steel Sheet, Metallic-Coated and Polymer Precoated for Corrugated Steel Pipe
- B. Montana Department of Transportation (MDOT). *Standard Specifications of Road and Bridge Construction*. (MDOTSS). 1995.
  - 1. Section 603 Culverts, Storm Drains, Sanitary Sewers, Stockpasses, and Underpasses
  - 2. Section 708 Concrete, Plastic, and Fiber Pipe
  - 3. Section 709 Metal Pipe
- C. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

#### PART 2 PRODUCTS

## **2.01 CORRUGATED METAL PIPE (CMP)**

- A. The corrugated metal pipe shall be dimensioned as shown on the Drawings and conforming to the requirements of MDOTSS Section 709, Metal Pipe. The pipe shall be 0.064 minimum thickness steel with 2-inch by 1/2-inch corrugations.
- B. The coupling bands shall meet AASHTO M36 requirements.
- C. Furnish flared end terminal sections on pipe ends with standard coupling band.
- D. All culverts shall have a 10-mil polymer coating according to AASHTO M246.

## **PART 3 EXECUTION**

### **3.01 HANDLING AND PROTECTION**

- A. Care shall be taken in loading, transporting, unloading, and storing the pipe to prevent injury.
- B. No pipe shall be installed that is found to be defective. If any pipes are found to be defective at the site, then the pipe shall be removed from the site and replaced by the Contractor at his/her own expense.

### **3.02 INSTALLATION**

- A. The pipe shall be installed in accordance with the procedures established in MDOTSS Section 603, Culverts, Storm Drains, Sanitary Sewers, Stockpasses, and Underpasses, Section 207, Culvert Excavation and Trench Excavation, and the manufacturer's instructions.

### **3.03 CLEANING**

- A. At the conclusion of the work, thoroughly clean all pipe by flushing with water to remove all dirt, stones, pieces of wood, or other debris.

## **PART 4 MEASUREMENT AND PAYMENT**

### **4.01 MEASUREMENT AND PAYMENT**

- A. No separate measurement and payment will be made for any work specified in this Section. The work specified in this Section will be considered incidental to the lump sum price for bid item "Stormwater Management" specified in Section 02713.

**END OF SECTION**

## SECTION 02657

### UTILITY RELOCATION

#### **PART 1 GENERAL**

##### **1.01 TELEPHONE CABLE RELOCATION**

- A. The Contractor shall coordinate with Citizens Frontier for the location of an underground telephone cable. The telephone cable is in the location of the planned weigh station as shown on the Drawings.
- B. Relocation of the telephone cable shall be performed by Citizens Frontier. It shall be the responsibility of the Contractor to coordinate the telephone cable relocation with Citizens Frontier and Lincoln County in order to prevent interruption of landfill operation. The cable shall be moved to the northern property boundary or other location approved by Citizens Frontier and Lincoln County.

##### **1.02 PROTECTION OF EXISTING UTILITIES**

- A. Assume full responsibility for the protection of all utilities, public or private, including poles, signs, services to buildings, utilities in the street, gas pipes, water pipes, hydrants, sewers, drains, and electric and telephone cables, whether or not they are shown on the Drawings. Contractor is responsible for all damage done to such utilities.
  - 1. Should damage of any kind occur to the existing pipelines, make repairs to the satisfaction of the CO/COTR as part of the work under this Item.
- B. Carefully support and protect all such utilities from injury of any kind. Repair any damage resulting from the Contractor's operations at Contractor's expense.
- C. The Contractor shall bear full responsibility for obtaining all locations of underground structures and utilities (including existing water services, drain lines, and sewers). Maintain service and pay all costs or charges resulting from damage thereto.
- D. Notify utility owner if utility is damaged by the Contractor's operations. Repair damaged utility only with written authorization. Provide CO/COTR a copy of every written authorization.
- E. Use granular bedding material to rebed utilities exposed below mid-diameter. Extend granular bedding material to the limits of the excavation and a minimum of 2 feet beyond each side of the exposed utility.

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#### **PART 2 PRODUCTS (NOT USED)**

#### **PART 3 EXECUTION (NOT USED)**

#### **PART 4 MEASUREMENT AND PAYMENT**

##### **4.01 MEASUREMENT**

- A. No separate measurement will be made for relocation of the telephone cable, or any other work of this section.



#### 4.02 PAYMENT

- A. Payment for all work specified in this Section will be made at the contract lump sum price for " Telephone Cable Relocation. " Price and payment shall constitute full compensation for furnishing all plant, labor, material and equipment, and performing all operations necessary for complete the utility relocation as specified herein.

**END OF SECTION**

## SECTION 02713

### STORMWATER MANAGEMENT

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Supply all materials, equipment, and labor to construct and maintain all stormwater controls as shown on the Drawings and as specified herein. Stormwater management consists of controlling stormwater under two general conditions within the project area. The two general conditions are:
  - 1. Direct runoff (from offsite) and away from the landfill cell area.
  - 2. Direct runoff to an onsite primary sediment pond located within the landfill cell area. From here, stormwater will be directed into a secondary sediment pond.
- B. Provisions for directing runoff and runoff from the landfill area have been provided for in the project drawings. In the process of construction of these provisions and other portions of the project, the Contractor shall provide any additional short-term protection that may be necessary to direct stormwater of the design storm event away from the project area.
- C. The stormwater management work includes controlling stormwater within the project area. The facilities to manage these stormwaters are capable of collecting, directing and infiltrating the runoff from disturbed areas.
- D. Contractor shall provide equipment (e.g., pumps, piping, earthworking equipment) and personnel to control flows in excess of the design flows. The Contractor shall control these flows as acceptable to the CO/COTR and in accordance with approved submittals.

##### 1.02 RELATED WORK

- A. Section 01300 Submittals
- B. Section 02200 Earthwork - General
- C. Section 02210 Site Grading
- D. Section 02223 Backfilling and Compaction
- E. Section 02618 Culverts
- F. Section 02271 Riprap

##### 1.03 REFERENCES

- A. State of Montana Surface Water Quality Standard Stormwater Regulations

##### 1.04 SUBMITTALS

A. The Contractor shall submit to the CO/COTR, as provided in Section 01300, information as noted below.

1. Contractor shall submit four copies of a Stormwater Management Plan that addresses the following items prior to beginning any activities on site.
  - a. Nature, locations, and capacities of proposed stormwater storage and conveyance facilities.
  - b. Operations scheme describing how stormwater will be removed from the project area.
  - c. Locations of discharge points.
  - d. Priorities and procedures for removal of stormwater from storage after the storm event.
  - e. Runon/runoff controls for diversion of runoff and for diversion of flows greater than the design storm.
  - f. Control to prevent runoff from entering or accumulating in excavations.
  - g. Personnel responsible for operation and maintenance of stormwater management facilities.
  - h. Contingency Plan for runoff in excess of the design storm.
  - i. Drawings as are necessary to show the site in various stages of construction and operation; show and describe, as a minimum, the locations and relationships of the above items and activities at not less than six stages of the project life, relatively equally distributed from start to finish.
2. Proposed Revisions to the Stormwater Management Plan prior to their implementation.

## **PART 2 PRODUCTS**

### **2.01 GENERAL**

- A. Provide all materials and equipment in suitable and adequate quantity and quality as required to accomplish the work shown on the Drawings and specified herein.

## **PART 3 EXECUTION**

### **3.01 GENERAL**

- A. Construct and maintain all berms, drainage ditches and stormwater retention ponds to intercept and manage stormwater as specified herein.
1. Divert runoff from the project area and isolate and collect runoff from the project area and convey it to the stormwater retention ponds.

2. Divert runoff from entering in excavations. Allow runoff from excavation areas to infiltrate within the excavated areas or convey to the stormwater retention ponds.

### 3.02 EXCAVATION AREAS

- A. Surface runoff flowing toward excavation areas shall be collected in shallow ditches and diverted around the perimeter of the excavation.
- B. Excavations for foundations and structures shall be maintained in-the-dry for a minimum of four days after concrete placement. In no event shall water be allowed to enter an excavation and rise to cause unbalanced pressure on foundations and structures until the concrete or mortar has set at least 24 hours.
- C. Drainage operations shall at all times be conducted in such a manner as to preserve the natural undisturbed bearing capacity of the subgrade at the bottom of the excavation. If the subgrade becomes disturbed for any reason, the unsuitable subgrade material shall be removed and replaced with concrete, compacted select granular fill, compacted structural fill, or other approved material to restore the bearing capacity of the subgrade to its natural undisturbed condition.
- D. Drainage operations shall be conducted in a manner that does not cause loss of ground or disturbance to the pipe bedding or soil that supports overlying or adjacent structures.

### 3.03 STORMWATER HANDLING AND STORAGE

- A. Stormwater Removal  
Remove all accumulated stormwater as necessary to maintain safe working conditions.
- B. Conveyance to Stormwater Retention Ponds  
Construct and maintain berms and drainage ditches for conveying runoff from the excavation areas to storage areas. Provide and maintain sufficient conveyance capacity to accommodate peak flows from runoff areas to stormwater retention ponds during the design storm.
- C. Temporary Stormwater Storage  
Construct and maintain infiltration depressions for temporary storing runoff from the project area. Provide and maintain sufficient storage capacity to store the design storm assuming 100 percent runoff.

## PART 4 MEASUREMENT AND PAYMENT

### 4.01 MEASUREMENT

- A. No separate measurement will be made for stormwater management.

### 4.02 PAYMENT

- A. Payment for all stormwater management will be made at the Contract lump sum price for bid item "Stormwater Management." Price and payment shall constitute full

compensation for furnishing all plant, labor, material and equipment, and performing all operations necessary for completion of the work specified in this Section.

**END OF SECTION**

02713-4

## SECTION 02830

### FENCES AND GATES

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Install permanent chain link fence and gate around the Class IV asbestos landfill site as shown on the Drawings.
- B. Furnish all labor, materials, equipment, and incidentals necessary and install the chain link fence (6 feet) with barbed wire and gate.
- C. Details of permanent fence and gates shall comply with Montana Department of Transportation Standard Drawing 607-25.

##### 1.02 RELATED WORK

- A. Section 01300 Submittals
- B. Section 03301 Concrete and Reinforcing Steel

##### 1.03 REFERENCES

- A. Federal Specifications (FS)
  - 1. FS FF-P-101, (Rev F) - Padlocks
  - 2. FS RR-F-191/GEN, (Rev K) - Fencing, Wire and Post Metal and Gates, Chain Link Fence Fabric, and Accessories
  - 3. FS RR-F-191/1, (Rev D) - Fencing, Wire and Post, Metal (Chain Link Fence Fabric)
  - 4. FS RR-F-191/2, (Rev D) - Fencing, Wire and Post, Metal (Chain Link Fence Gates)
  - 5. FS RR-F-191/3, (Rev D) - Fencing, Wire and Post, Metal (Chain Link Fence Posts, Top Rails and Braces)
  - 6. FS RR-F-191/4, (Rev D) - Fencing, Wire and Post, Metal (Chain Link Fence Accessories)
- B. Montana Department of Transportation
  - 1. Standard Drawing 607-25
  - 2. SSRBC Section 712 Fencing Material

## 1.04 SUBMITTALS

- A. The Contractor shall submit to the CO/COTR, as provided in Section 01300, information as noted below.
  - 1. Contractor shop drawings shall include post sizes and sections; post setting and bracing; gate details; details of attachment of fabric to support members; and any other details required to erect the chain link fence and gate.
  - 2. Schedule when sections of the permanent fence and gate will be installed.

## PART 2 PRODUCTS

### 2.01 MATERIALS

- A. Materials shall conform to the following:

- 1. Chain Link Fence - FS RR-F-191/GEN

- a. Fabric

FS RR-F-191/1, Type I, zinc-coated steel wire with minimum coating weight of 2.0 ounces of zinc per square foot of coated surface, or Type II, aluminum-coated steel wire. Fabric shall be fabricated of 9-gauge wire woven in 2-inch mesh. Fabric height shall be 6 feet. Fabric shall be twisted and barbed on the top selvage and knuckled on the bottom selvage.

- b. Gate (20 foot opening)

FS RR-F-191/2. Gate shall be the type and swing shown. Gate frames shall be constructed of Class 1 Grade A or B, steel pipe, size SP2, as specified in FS RR-F-191/3. Gate fabric shall be as specified for chain link fabric. Vertical members of gate leaves shall be spaced so that no members are more than 8 feet apart. Gates over 10 feet wide shall be additionally braced with a  $\frac{5}{16}$ -inch, minimum diameter, diagonal truss rod. Gate fabric shall be attached to the gate frame by method standard with the manufacturer except that welding will not be permitted. Latches, hinges, stops, keepers, rollers, and other hardware items shall be furnished as required for the operation of the gate. Latches shall be arranged for padlocking so that padlock will be accessible from both sides of the gate regardless of the latching arrangement.

- c. Posts

FS RR-F-191/3, zinc-coated; Class 1 Grade A or B, steel pipe; Class 3, formed steel sections. Sizes shall be as specified in FS RR-F-191/3 for the class used. Line posts shall be of the same class throughout the fence. Terminal (corner, gate, and pull) posts selected shall be of the same class throughout the fence. Gate post shall be either round or square, subject to the limitation specified in FS RR-F-191/3.

d. Braces

FS RR-F-191/3, zinc-coated; Class 1 Grade A or B, steel pipe, size SP1 Class 3, form steel sections, size FS1, conforming to FS RR-F-191/3, may be used as braces if Class 3 line posts are furnished.

e. Accessories

FS RR-F-191/4. Ferrous accessories shall be zinc-coated. Truss rods shall be furnished for each terminal post. Truss rods shall be provided with turnbuckles or other equivalent provisions for adjustment. Tie wire for attaching fabric to braces and posts shall be 9-gauge steel wire. Barbed wire shall be 3-strand, 12½ gauge, hot dipped galvanized steel. Barbed wire support arms shall be the 45 degree type or equivalent and of the design required for the post furnished.

2. Concrete

See Section 03301.

3. Padlocks

FS FF-P-101, Type EPB, Size 1¼-inch. Padlocks shall be keyed alike and each lock shall be furnished with two keys.

## **PART 3 EXECUTION**

### **3.01 GENERAL – FENCE AND GATES**

- A. Permanent fence shall be installed to the lines indicated. The area on either side of the fence line shall be cleared to the extent indicated. Line post shall be spaced equidistant at intervals not exceeding 10 feet. Terminal (corner, gate, and pull) posts shall be set at abrupt changes in vertical and horizontal alignment. Fabric shall be continuous between terminal posts, however, runs between terminal posts shall not exceed 500 feet.

### **3.02 EXCAVATION**

- A. Post holes shall be cleared of loose material. Waste material shall be spread where directed. The ground surface irregularities along the fence line shall be eliminated to the extent necessary to maintain a 2-inch clearance between the bottom and finish grade.

### **3.03 POSTS**

- A. Posts shall be set plumb and in alignment. Except where solid rock is encountered, posts shall be set in concrete to the depth of 36 inches. Posts not set in rock shall be set in concrete from the rock to ground level. Posts set in concrete shall be set in holes not less than 9-inches in diameter for terminal and line posts. Diameters of holes in solid rock shall be at least 1 inch greater than the largest cross section of the post. Concrete and grout shall be thoroughly consolidated around each post so as to be free of voids and



finished to form a dome. Concrete and grout shall be allowed to cure for 72 hours prior to attachment of any item to the posts. Class 3 type line posts may be mechanically driven provided soil conditions are such that the driven posts develop strengths at least equal to posts set in concrete and rock is not encountered. Driven posts shall be set to a minimum depth of 3 feet and shall be protected with drive caps when being set.

#### 3.04 TENSION WIRES

- A. Tension wires shall be installed along the bottom of the fence line and attached to the terminal posts of each stretch of the fence. Bottom tension wire shall be installed within the bottom 6 inches of the installed fabric. Tension wire shall be pulled taut and shall be free of sag.

#### 3.05 CHAIN LINK FABRIC

- A. Chain link fabric shall be installed on the side of the post indicated. Fabric shall be attached to terminal posts with stretcher bars and tension bands. Bands shall be spaced at approximately 15-inch intervals. Fabric shall be pulled taut to provide a smooth uniform appearance free from sag. Fabric shall be fastened to line posts at approximately 15-inch intervals and fastened to tension wires at approximately 24-inch intervals. Fabric shall be cut by untwisting and removing pickets. Splicing shall be accomplished by weaving a single picket into the ends of the rolls to be joined. The bottom of the installed fabric shall be 2 inches ( $\pm\frac{1}{2}$ -inch) above the ground.

#### 3.06 BARBED WIRE

- A. Barbed wire supporting arms and barbed wire shall be installed as recommended by the manufacturer. Supporting arms shall be anchored to the posts in such a manner as to prevent easy removal with hand tools. Barbed wire shall be pulled taut and attached to the arms with clips or other means that will prevent easy removal. The directions of the supporting arms shall be facing out.

#### 3.07 GATE

- A. The gate shall be installed at the location shown on the Drawings. Hinged gates shall be mounted to swing freely. Latches, stops, and keepers shall be installed as required. Padlocks shall be attached to gates or gate posts with chains to prevent padlock removal.

### PART 4 MEASUREMENT AND PAYMENT

#### 4.01 MEASUREMENT

- A. Chain link fences and gate will be measured by the linear foot of chain link fence and gate satisfactorily constructed.

#### 4.02 PAYMENT

- A. Payment for all work necessary for construction of the specified fences and gate will be paid for at the applicable contract unit price per linear foot for bid item "Fences and Gates." Price and payment shall constitute full compensation for furnishing all required labor, materials, equipment, latches, truss rods, and other appurtenances which are

necessary for fence and gate construction and all other items incidental thereto.

**END OF SECTION**

## SECTION 03301

### CONCRETE AND REINFORCING STEEL

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment, and incidentals required, and install all concrete work complete as shown on the Drawings and as specified herein.
- B. Furnish field testing of concrete to demonstrate conformance to these Specifications by an independent testing laboratory acceptable to the CO/COTR but engaged by and at the expense of the Contractor.

##### 1.02 RELATED WORK

- A. Section 01300 Submittals
- B. Section 02200 Earthwork - General
- C. Section 02210 Site Grading
- D. Section 02223 Backfilling and Compaction
- E. Section 02231 Earthen/Granular Materials
- F. Section 02830 Fences and Gates
- G. Section 10880 Truck Scale and Appurtenances
- H. Section 13122 Self-Framing Metal Building Systems
- I. Section 13200 Underground Polyethylene Storage Tank

##### 1.03 SUBMITTALS

- A. Submit to the CO/COTR, in accordance with Section 01300, shop drawings and product data. Submittals shall include at least the following:
  - 1. The name, address, and qualifications of the independent testing laboratory proposed.
  - 2. Concrete mix proposed for use including constituent quantities per cubic yard, water cement ratio, type, and manufacturer of cement.
  - 3. Placing drawings and bar bending details in conformity with the recommendations of ACI 315.
  - 4. Technical data on all materials and components.
  - 5. Material Safety Data Sheets (MSDS) for all concrete admixtures and curing agents.

B. Test Reports

1. Sieve analysis of fine and coarse aggregates.
2. Concrete mix proposed for use including constituent quantities per cubic yard, water cement ratio, type, and manufacturer of cement.
  - a. Standard deviation data for each proposed concrete mix based on statistical records.
  - b. Water cement ratio curve for each proposed concrete mix based on laboratory tests. Give average cylinder strength test results at 28 days for laboratory concrete mix designs. Provide results of 7 and 14 day tests if available.
3. Field test results shall be submitted on the same day the tests are made.

C. Certifications

1. Certify admixtures used in the same concrete mix are compatible with each other and the aggregates.
2. Certify that the Contractor does not have a beneficial interest in the independent testing laboratory.

1.04 REFERENCE STANDARDS

A. American Society for Testing and Materials (ASTM)

1. ASTM A615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
2. ASTM C31 - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
3. ASTM C33 - Standard Specification for Concrete Aggregates.
4. ASTM C94 - Standard Specification for Ready-Mixed Concrete.
5. ASTM C143 - Standard Test Method for Slump of Hydraulic Cement Concrete.
6. ASTM C150 - Standard Specification for Portland Cement.
7. ASTM C173 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
8. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
9. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.

10. ASTM C494 – Standard Specification for Chemical Admixtures for Concrete.
  11. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
  12. ASTM C1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)
  13. ASTM D1751 - Standard Specification for Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (No Extruding and Resilient Types)
- B. American Concrete Institute (ACI)
1. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight and Mass Concrete.
  2. ACI 301 - Specifications for Structural Concrete for Buildings.
  3. ACI 305R - Hot Weather Concreting.
  4. ACI 306R - Cold Weather Concreting.
  5. ACI 315 - Details and Detailing of Concrete Reinforcement.
  6. ACI 318 - Building Code Requirements for Reinforced Concrete.
- C. Concrete Reinforcing Steel Institute (CRSI)
1. DA4 - Manual of Standard Practice.
- D. Federal Specifications
1. SS-S-210A – Sealing Compound for Expansion Joints
- E. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted

#### 1.05 QUALITY ASSURANCE

- A. If, during the progress of the work, it is impossible to secure concrete of the required workability and strength with the materials being furnished, the CO/COTR may order such changes in proportions or materials, or both, as may be necessary to secure the desired properties. All changes so ordered shall be made at the Contractor's expense.
- B. Reinforced concrete shall comply with ACI 318 and ACI 301, except as modified herein.
- C. Testing necessary to establish the concrete mixes and all field testing of concrete shall be performed by an independent testing laboratory, paid by the Contractor. Methods of testing shall comply with the latest applicable ASTM standards.

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Reinforcing steel shall be shipped and stored with bars of the same size and shape fastened bundles with durable tags, marked in a legible manner with waterproof markings

showing the same designations as shown on the submitted placing drawings. Reinforcing steel shall be free from mill scale, loose rust, dirt, grease, or other foreign matter. Store off the ground and protect from moisture, dirt, oil, or other injurious contaminants.

- B. Products shall be stored in conformity with the manufacturer's recommendations. All products shall be delivered with labels intact and legible.
- C. Sand, aggregates, and cement shall be stored or stockpiled in conformity with the recommendations of ACI 301.

## **PART 2 PRODUCTS**

### **2.01 GENERAL**

- A. The use of manufacturer's name and model or catalog number is for the purpose of establishing the standard of quality and general configuration desired.
- B. Like items of materials shall be the end products of one manufacturer in order to provide standardization for appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and any applicable state or local requirements.

### **2.02 MATERIALS**

- A. Cement shall be domestic portland cement conforming to ASTM C150, Type II cement.
- B. Fine aggregate shall be washed inert natural sand conforming to the requirements of ASTM C33.
- C. Coarse aggregate shall be a well-graded crushed stone or washed gravel conforming to the requirements of ASTM C33, Size Number 57 or 67. Limits of Deleterious Substances and Physical Property Requirements shall be as recommended for severe weathering regions.
- D. Water shall be potable, clean, and free from injurious amounts of oils, acids, alkalis, organic matter, or other deleterious substances.
- E. Concrete admixtures shall be free of chlorides and alkalis (except for those attributable to water). When it is required to use more than one admixture in a concrete mix, the admixtures shall be from the same manufacturer and shall be certified to be compatible.
  - 1. Air entraining admixture shall comply with ASTM C260. Proportioning and mixing shall be in accordance with manufacturer's recommendations.
  - 2. Water reducing admixture shall comply with ASTM C494, Type A. Proportioning and mixing shall be in accordance with manufacturer's recommendations.
  - 3. Admixtures causing retarded or accelerated setting of concrete shall not be used without written approval from the CO/COTR. When allowed, the admixtures shall be retarding or accelerating water reducing admixtures.
- F. Reinforcing steel bars shall be deformed steel conforming to ASTM A615, Grade 60.

- G. Tie wires for reinforcing steel shall be 16 gauge or heavier, black annealed wire.
- H. Precast concrete block bar supports shall conform to the CRSI Bar support standard, Precast Blocks with wires.
- I. Waterstops shall be one of the following:
  - 1. Injection tube waterstops shall be permeable grout tubes suitable for injection of water-reactive polyurethane resin, to act as an effective waterstop in concrete construction joints. Polyurethane resin material shall form a flexible closed cell polyurethane foam.
  - 2. Preformed plastic adhesive waterstop shall be a single component, extruded, self-sealing plastic waterstop conforming to Federal specification SS-S-210A, to act as an effective waterstop in concrete construction joints. The waterstop shall be non-oxidizing, non-evaporating, non-expanding, and non-shrinking, and shall contain no solvents.
- J. Premolded joint filler shall be asphalt-impregnated fiber board conforming to ASTM D1751.
- K. Joint sealant shall conform to ASTM C920-02, Type M, Grade P, Class 25, Use T, and be suitable for use with asphalt-impregnated fiber board.
- L. Nonshrink cement grout shall be a nonmetallic cementitious grout conforming to ASTM C1107.

## 2.03 MIXES

- A. Select proportions of ingredients to meet the design strength and materials limits specified in Table 1 and to produce concrete having proper placability, durability, strength, appearance, and other required properties. Proportion ingredients to produce a homogenous mixture which will readily work into corners and angles of forms and around reinforcement without permitting materials to segregate or allowing excessive free water to collect on the surface.
- B. The design of each mix shall be based on standard deviation data of prior mixes with essentially the same proportions of the same constituents or, if not available, be developed by independent testing laboratory acceptable to the CO/COTR engaged by and at the expense of the Contractor. Acceptance of mixes based on standard deviation shall be based on the modification factors for standard deviation tests contained in ACI 318. Acceptance of mixes based on laboratory tests shall be based on strengths greater than the required design strengths specified in ACI 318. The water content of the concrete mixes to be used, as determined from the curve, shall correspond to strengths 16 percent greater than the required design strength. The resulting mix shall not conflict with the limiting values for maximum water cementitious ratio and net minimum cementitious content as specified in Table 1.
- C. Compression Tests: Provide testing of the proposed concrete mix or mixes to demonstrate compliance with the compression strength requirements in conformity with the provisions of ACI 318.
- D. All concrete shall have 3.5 to 5 percent air entrainment, as measured by ASTM C231.

- E. Slump of the concrete, as measured by ASTM C143, shall be as shown in Table 1.
- F. Proportion admixtures according to the manufacturer's recommendations. Two or more admixtures specified may be used in the same mix provided that the admixtures in combination retain full efficiency and have no deleterious effect on the concrete or on the properties of each other.

TABLE 1				
Design Strength <sup>1</sup>	Cement Content <sup>2</sup>	W/C <sup>3</sup>	WR <sup>4</sup>	Slump <sup>5</sup>
4,000	560	0.44	Yes	3-5

- <sup>1</sup> Minimum concrete compressive strength at 28 days
- <sup>2</sup> Minimum cement content in lbs/cu yd
- <sup>3</sup> W/C is the maximum water-cement ratio by weight
- <sup>4</sup> WR is water reducing admixture
- <sup>5</sup> Slump is the allowable range in slump in inches

#### 2.04 MEASURING, BATCHING, MIXING, AND TRANSPORTING CONCRETE

- A. Measuring, batching, mixing, and transporting concrete shall conform to ASTM C94 and the requirements herein, or as otherwise approved in writing by the CO/COTR.
- B. Ready-mixed concrete, whether produced by a concrete supplier or the Contractor shall conform to the requirements above. No hand mixing will be permitted.
- C. Admixtures shall be dispensed into the batch in conformity with the recommendations of the manufacturer of the admixtures.
- D. Concrete shall be mixed until there is uniform distribution of the materials and shall be discharged completely before the mixer is recharged. The mixer shall be rotated at a speed recommended by the mixer manufacturer and mixing shall be continued for at least 12 minutes after all the materials are in the mixer. Concrete shall be placed within 12 hours of the time at which water was first added, otherwise it shall be rejected. Concrete which has been remixed or retempered, or to which an excess amount of water has been added, shall also be rejected.

#### 2.05 FORMS

- A. Forms shall be adequately braced and tied to prevent motion when concrete is placed. No wooden spreaders will be allowed in the concrete.
- B. Forms shall be thoroughly cleaned before using and shall be treated with oil, or other approved material.
- C. Wire ties will not be allowed. Use ties which permit any metal to be removed for a depth at least 1-inch from the concrete surface.
- D. All exposed edges of the finished concrete shall be chamfered  $\frac{3}{4}$  of an inch.



## **PART 3      EXECUTION**

### **3.01    REINFORCING STEEL**

- A.    Reinforcing steel shall be accurately fabricated to the dimensions shown. Bars shall be bent around a revolving collar having a diameter of not less than that recommended in ACI 318. All bars shall be bent cold.
- B.    Unless otherwise shown, splices in reinforcing steel shall be lapped not less than 40 bar diameters.
- C.    Before being placed in position, reinforcement shall be thoroughly cleaned of loose mill and rust scale, dirt, and other coatings, including ice, that reduce or destroy bond. Where there is a delay in depositing concrete after the reinforcement is in place. Bars shall be reinspected and cleaned when necessary.
- D.    All reinforcing steel shall be adequately supported to maintain its position during placing of concrete.
- E.    Reinforcement which is to be exposed for a considerable length of time after being placed shall be given a heavy coat of cement grout.
- F.    In no case shall any reinforcing steel be covered with concrete until the amount and position of the reinforcements have been checked by the CO/COTR and permission has been given to proceed with the concreting.

### **3.02    INSPECTION AND COORDINATION**

- A.    The batching, mixing, transporting, placing, and curing of concrete shall be subject to the inspection of the CO/COTR at all times. The Contractor shall advise the CO/COTR of his/her readiness to proceed at least 24 hours prior to each concrete placement. The CO/COTR will inspect the preparations for concreting including the preparation of previously placed concrete, the reinforcing and the alignment, cleanliness, and tightness of formwork. No placement shall be made without the inspection and acceptance of the CO/COTR.

### **3.03    CONCRETE APPEARANCE**

- A.    Concrete mix showing either poor cohesion or poor coating of the coarse aggregate with paste shall be remixed. If this does not correct the condition, the concrete shall be rejected.
- B.    Concrete for the work shall provide a homogeneous structure which, when hardened, will have the required strength, durability and appearance. Mixtures and workmanship shall be such that concrete surfaces, when exposed, will require no finishing.

### **3.04    PLACING AND COMPACTING**

- A.    No concrete shall be placed until forms, condition of subgrade and method of placement have been approved by the CO/COTR. Before depositing concrete, all debris, foreign matter, dirt, and water shall be removed from the forms. The contact surface between concrete previously placed and new concrete shall be cleaned and brushed with cement

paste. Concrete shall not be placed in standing water, nor shall running water be permitted to flow over the surface of fresh concrete within four days after its placing.

- B. Deposit concrete as near its final position as possible to avoid segregation due to rehandling or flowing. Pumping of concrete will be permitted when an approved design mix and aggregate sizes, suitable for pumping, are used. Do not deposit concrete which has partially hardened or has been contaminated by foreign materials. If the section cannot be placed continuously, place construction joints as specified or as approved. Do not drop concrete more than 4-ft.
- C. High frequency mechanical vibrators shall be used to the extent necessary to obtain proper consolidation of the concrete, but not to move or transport concrete in the forms. Care shall be taken to avoid segregation of aggregates by excess vibration. Vibration shall continue until the frequency returns to normal, trapped air ceases to rise and the surface appears liquefied, flattened and glistening. Concrete adjacent to forms and around embedments shall be carefully spaded or rodded.
- D. Nonshrink grout shall be mixed and placed in accordance with manufacturer's recommendations.
- E. Waterstops, joint fillers, and joint sealants shall be installed in accordance with manufacturer's recommendations.

### 3.05 CURING AND PROTECTION

- A. Protect all concrete work against injury from the elements and defacements of any nature during construction operations.
- B. Concrete shall be cured by either by water curing, sheet material curing, or liquid membrane curing compound except that liquid membrane curing compound shall not be used on any concrete surface where additional concrete is to be placed or where the concrete surface is to be coated or painted.
- C. Finished surfaces and slabs shall be protected from the direct rays of the sun to prevent checking and crazing.
- D. Concrete placed during cold weather shall be batched, delivered, placed, cured, and protected in compliance with the recommendations of ACI 306R. Salt, manure, or other chemicals shall not be used for cold weather protection.
- E. Concrete placed during hot weather, shall be batched, delivered, placed, cured, and protected in compliance with the recommendations of ACI 305R. The temperature of the concrete shall be such that it will cause no difficulties from loss of slump, flash set, or cold joints. Immediately cover plastic concrete with sheet material during hot weather.

### 3.06 FIELD TESTS

- A. Sets of four field control cylinder specimens shall be taken by the testing laboratory during the progress of the work, in compliance with ASTM C31. The number of sets of concrete test cylinders taken each day shall not be less than one set, nor less than one set for each 50 cu yds of concrete, nor less than one set for each 5,000 sq ft of surface area for slabs. One cylinder shall be broken at seven days and two cylinders shall be broken and their strengths averaged at 28 days. The fourth cylinder shall be retained for later testing, if

necessary. When the average 28 day compressive strength of the cylinders in any set falls below the required compressive strength or below proportional minimum seven day strengths (where proper relation between seven and 28 day strengths have been established by tests), the CO/COTR may reject the concrete represented by the set of cylinders, may require modification of the concrete, and/or may require modification of the proportions, water content, or temperature conditions of the design mix to achieve the required strengths.

- B. The Contractor shall cooperate with the laboratory personnel in the making of tests by allowing free access to the work for the selection of samples, and shall provide an insulated closed curing box for specimens, affording protection to the specimens against injury or loss.
- C. Slump tests shall be made in the field in conformity with ASTM C143.
- D. Tests for air content shall be made in compliance with either the pressure method complying with ASTM C231 or by the volumetric method complying with ASTM C173.

### 3.07 STRIPPING AND FINISHING CONCRETE

- A. Forms for slabs on grade shall not be stripped before the concrete has attained a strength of at least 30 percent of the specified design strength, unless otherwise approved. This is equivalent to approximately "100 day-degrees" of moist curing.
- B. Care shall be exercised to prevent damaging edges or obliterating the lines of chamfers or corners when removing the forms or doing any other work adjacent thereto.
- C. Clean all exposed concrete surfaces and adjoining work stained by leakage of concrete, to the satisfaction of the CO/COTR.
- D. Concrete shall have off-form finish with fins and other projections removed and defects repaired by approved means. All tie-holes shall be filled with cement mortar or epoxy.
- E. Top surface of slabs shall be screened to the established grades and shall be level with a tolerance of 3-in when checked with a 10-ft straightedge. The surface shall be pitched to drain where shown on the Drawings. The surface shall be finished to give a smooth, hard, even surface free from high or low spots or other defects. Immediately after applying a floated finish, surfaces shall be given a broom finish drawn in the direction of drainage. Failure to meet these conditions shall be cause for removal, grinding, or other correction as directed by the CO/COTR. No ponding will be allowed.

## PART 4 MEASUREMENT AND PAYMENT

### 4.01 MEASUREMENT AND PAYMENT

- A. No separate measurement and payment will be made for all work specified in this Section. All work specified in this Section will be considered incidental to the work specified in other sections.

**END OF SECTION**

## SECTION 10880

### TRUCK SCALE AND APPURTENANCES

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and install, complete in every detail, one truck scale with all appurtenances including concrete foundation, as shown on the Drawings and as specified herein.

##### 1.02 RELATED WORK

- A. Section 02223 Backfilling and Compaction
- B. Section 03301 Concrete and Reinforcing Steel
- C. Electrical work is included in Division 16

##### 1.03 SUBMITTALS

- A. Submit, in accordance with Section 01300, certified shop drawings and other material required to establish compliance with this Section. Shop drawings shall show details of design, materials, and dimensions of the equipment, complete electrical wiring diagrams and foundation, pit, access manholes, and anchor bolt-setting plans. Submittals shall include the following:
  - 1. A complete total bill of materials for all equipment.
  - 2. A list of the manufacturer's recommended spare parts with the manufacturer's current price for each item.
  - 3. All information required by Section 01730.
  - 4. In the event that it is impossible to conform with certain details of this Section due to different manufacturing techniques, describe completely all non-conforming aspects.
  - 5. Complete instructions for the assembly and installation of the equipment specifically prepared for the equipment furnished, shall be furnished with the shop drawings. The instructions shall include specifications for the manholes, concrete and complete installation instructions for the concrete deck surface.
  - 6. Operation and Maintenance Data
    - a. As provided in Section 01730, submit an operation and maintenance manual prepared specifically for this installation which shall include all required cuts, drawings, equipment list, descriptions, maintenance and lubrication schedules, trouble shooting guides, spare parts lists, etc, that are required to instruct personnel unfamiliar with such equipment.

- b. A factory representative who has complete knowledge of the proper operation and maintenance shall be provided for up to 3 days to instruct representatives of the Government and the CO/COTR on proper operation and maintenance. This work may be conducted in conjunction with the inspection of the installation and testing as provided under Paragraph 3.04 below. If there are difficulties in operation of the equipment due to the manufacturers' design or fabrication, additional service shall be provided at no additional cost to the Government.

7. Complete foundation details sealed by a Professional Engineer.

8. Additional submittals for concrete structures as specified in Section 03301.

#### 1.04 REFERENCE STANDARDS

A. American Concrete Institute (ACI)

1. ACI 318 – Building Code Requirements for Structural Concrete

B. American Society for Testing and Materials (ASTM)

1. ASTM A36 - Standard Specification for Carbon Structural Steel

C. American Institute of Steel Construction (AISC)

D. American Welding Society (AWS)

E. National Bureau of Standards, Office of Weights and Measures

1. Handbook 44

2. 2002 General Code

F. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

#### 1.05 QUALITY ASSURANCE

A. All the equipment specified herein shall be standard products in regular production and shall be furnished by a single manufacturer who is fully experienced, reputable and qualified in the manufacture of the equipment furnished.

#### 1.06 SYSTEM DESCRIPTION

A. The truck scale shall meet the following performance and design criteria:

- 1. Capacity: 60 tons minimum
- 2. Number of deck sections: 5
- 3. Capacity per deck section: 12 tons minimum
- 4. Length/Width: 10ft.W x 70ft.L

- B. Weighing shall be of the mechanical/electronic design using mechanical levers, and electronic load cell. Electronic signal shall be transmitted by an underground shielded cable to data center.
- C. Data center appurtenances shall include a Computer system with CPU 450 MHz min., 128 Megs Ram min., Windows 2000Pro Operating System, 2 COM Ports min. 56K modem, Tape drive and/or High capacity Zip drive, 17" Monitor min. w/ 800x600 capability, Keyboard, HP1200 Laser printer min. Software to be WasteWorks by Carolina Software, Cardinal WinVRS, or equal. Solid state data accumulator, digital indicator with keyboard and printer. All associated cables, connectors, power supply, surge protection, installation and set-up. Weigh indicator appurtenances shall meet the following performance and design criteria.

- 1. Solid state data accumulator, indicator and keyboard unit:
  - a. Digital display: 6 digits minimum
  - b. Alpha display: 10 characters minimum
  - c. Weight capacity range: 6 digits minimum
  - d. Weight graduation increments: 20 pound maximum
  - e. Inbound weight storage: 20 trucks minimum
  - f. Product code accumulation: 40 products minimum
  - g. Units: pounds, with conversion capability to kilograms
- 2. Printer
  - a. Paper size: 8-in by 5-1/2-in minimum ticket
  - b. Print characters: 40 characters per line (minimum)
  - c. Print paper copies: minimum four copies

- D. The concrete foundation shall be designated by a Professional Engineer registered in the state of Montana, and hired by the Contractor. The foundation design shall conform to ACI 318 and other industry standards as applicable. Maximum soil bearing pressure shall be no greater than 1500 psf.

#### 1.07 MAINTENANCE

- A. Special tools if required for normal operation and maintenance, shall be provided as specified in Section 01170.
- B. Furnish all spare parts recommended by the manufacturer for the normal operation and maintenance of the equipment and including the following minimum inventory:
  - 1. Three typing ribbons

2. 1000 blank tickets (four carbon copy-type)
  3. One set of printed circuit boards for all components
  4. One load cell
- C. The spare parts shall be packaged as specified in Section 01170.

## **PART 2 PRODUCTS**

### **2.01 GENERAL**

- A. The equipment furnished shall be designed and constructed in accordance with the best practices and methods and to operate satisfactorily when installed as described herein.
- B. All parts shall be designed and proportioned as to have liberal strength, stability, stiffness and to be especially adapted for the work to be done. Ample room and facilities shall be provided for inspection, repairs and adjustments.
- C. This Section calls attention to certain features but do not purport to cover all details of construction of the equipment.
- D. All structural steel used in the fabrication of the equipment shall conform to the requirements of the ASTM A36.
- E. Design and fabrication of structural steel members shall be in accordance with the latest AISC "Specification for Structural Steel Buildings".
- F. All welding shall conform to the latest Standards of the AWS.
- G. The scale and accessory equipment shall conform to or exceed the requirements of National Bureau of Standards Handbook 44 for use in commerce.
- H. Weighing levers shall be high strength cast iron or steel and shall be guaranteed against structural defects for at least 15 years.
- I. All other scale parts shall have at least a 1 year manufacturer guarantee.

### **2.02 EQUIPMENT**

- A. The scale shall be Fairbanks, "Type S" Endurocast Straight Lever, Leveltronic; Cardinal 10070-SRC-1 Pit Type, or equal. The scale manufacturer shall provide all necessary pit coping and steel and foundation bolts and nuts.
- B. Suspension connections between levers shall be adjustable to allow all parts to be kept in true vertical and horizontal position. The main lever suspension assembly shall have a vertical adjustment permitting leveling of the platform at all corners. All bearings shall be self-aligning to insure continuous full contact with knife edge pivots.
- C. The scale deck shall be equipped with two access manhole rings and covers. The covers shall be of similar materials to the scale platform and shall be able to withstand full truck loadings.

- D. The load cell shall measure and transmit the measurement through shielded flexible cables to the indicator. The cable shall be furnished by the manufacturer. Appropriate load cell linkage and junction box shall also be provided.
- E. The weight shall be indicated by an electronic solid state, digital indicator located in the Control Room of the Operations Building as shown in the Drawings. The unit shall be mounted on a counter top and arranged with the readout window and operating panel with control buttons and switches at the front.
- F. The equipment shall have the capability of storing inbound weights in memory with the ability to recall these weights and print a gross, tare, net weight ticket on the outbound weighing.
- G. The equipment shall be capable of accumulating by product code net weights entering or leaving the facility. This information shall be available via a report as well as a report of total net pounds entering or leaving the facility.
- H. The equipment shall be capable of displaying the net weights of a gross load on the scale by entering a known tare and print a gross, net, tare ticket.
- I. The equipment shall be Fairbanks Model 90-9201-3(14670), Cardinal Model 210, or equal and equipped with automatic zero tracking system which continuously tracks slow zero balance drift of the system and automatically switches out of this mode of operation when a load is applied to the scale. Snow or dirt accumulation shall be automatically compensated for so that the scale remains balanced at zero.
- J. In addition, the instrument shall be capable of self diagnostics, equipped with an automatic tare range to full capacity, equipped with radio frequency and electrical interference, filtering.
- K. The printer shall be solid state, microprocessor design. The printing impact should be capable of adjustment to produce unsmudged readable data through all copies. The printer shall print on command from either the digital indicator on its own print button.
- L. A surge voltage protection system shall be furnished to protect the equipment from surges in the power supply due to lightning or power company surges. The system shall be two-stage type with a response time of less than one millionth of a second. Grounding rods shall be furnished at the load cell, at each pit corner, and each cable connecting point. Surge voltage protection shall be Fairbanks, Model No 1403; Toledo, Model 913 or equal.
- M. Electrical equipment and materials furnished under this Section shall conform to appropriate sections of Division 16.
- N. Electrical power requirements shall be 120 VAC, 60 Hz.
- O. A gravity scale pit drain shall be provided and located to be capable of evacuating all storm water from the scale pit.

## 2.03 PAINTING

- A. All ferrous surfaces shall receive a prime coat and finish coat of paint at the manufacturer's shop. Prior to shop painting, all surfaces shall be thoroughly cleaned, dry, and free from



all mill scale, rust, grease, dirt, paint and other foreign substances by sand blasting or pickling in accordance to SSPC-SP6 or SSPC-SP8, respectively.

- B. Gears, bearing surfaces or other surfaces obviously not to be painted shall be given a heavy shop coat of grease or other rust resistant coating suitable for protection of the equipment during periods of storage and until such time as the equipment is started up for testing and operation.

### **PART 3 EXECUTION**

#### **3.01 INSTALLATION**

- A. Scale and accessories shall be installed where shown on the Drawings and in accordance with manufacturer's approved shop drawings and installation procedures.
- B. Load cell cable shall be supplied under this Section but the furnishing and installation of conduit, installation of load cable and connecting cable from scale to Operations is included in Division 16.
- C. Foundation preparation and concrete work shall conform with the applicable requirements in Divisions 2 and 3 of these specifications.

#### **3.02 INSPECTION AND TESTING**

- A. The Contractor shall require the manufacturer to furnish the services of a factory representative for 3 days, who has complete knowledge of proper operation and maintenance to inspect the final installation, calibrate the equipment, and supervise a test run of the equipment. These services may be combined with those provided under PART 1.
- B. If the scale or any electronic equipment does not meet the requirements specified herein, corrective measures shall be taken or the equipment removed and replaced with equipment which does meet these requirements.

### **PART 4 MEASUREMENT AND PAYMENT**

#### **4.01 MEASUREMENT**

- A. No separate measurement will be made for the work specified in this section for the truck scale.

#### **4.02 PAYMENT**

- B. Payment for the truck scale will be made at the Contract lump sum price for bid item "Truck Scale." Price and payment shall constitute full compensation for furnishing all plant, labor, material and equipment, and performing all operations necessary for completion of the work specified in this Section.

**END OF SECTION**

## SECTION 13122

### SELF-FRAMING METAL BUILDING SYSTEMS

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment, and incidentals required to design, fabricate, and install the metal building system complete as shown on the Drawings and as specified herein.
- B. The metal building system covered in this specification shall be of self-framing design utilizing the roof and wall panels as the primary structural supporting members.
- C. The metal building system shall be furnished and installed complete with all structural steel frame members, bracing, roof and wall panels, building insulation, trim, gutters, downspouts, flashing, cutouts, lighting, and all accessories herein specified as required for a building structure as specified.
- D. The metal building system shall be installed over a newly constructed concrete foundation to be designed and installed by the Contractor. Anchor bolts, framing geometry, flashing, and closure panels shall be provided and shall all be coordinated with foundation construction.

##### 1.02 RELATED WORK

- A. Section 02223 Backfilling and Compaction
- B. Section 03301 Concrete and Reinforcing Steel.

##### 1.03 SUBMITTALS

- A. Submit, in accordance with Section 01300, shop drawings and the manufacturer's specifications for the metal building system showing full details for the construction of the pre-engineered building. Submit details and catalog information for all components, accessories, and fasteners.
- B. Submit complete foundation details. Identify foundation reactions at all columns, identifying all applied loads, load factors, and load combinations.
- C. The color of all components including, but not limited to, the roof, walls, and trim of the metal building will be selected by the CO/COTR from manufacturers' color chip literature. Submit samples of actual finish on representative metal samples in available colors.
- D. Submit complete erection drawings and installation instructions, showing anchor bolt and base plate settings, and sections and details of openings, covering, and trim.
- E. Submittals for materials at concrete foundations shall conform to Section 03301.
- F. Samples shall be submitted for each of the following:

1. Roof system: 12-in by 12-in square panel
2. Wall system: 12-in by 12-in square panel
3. Panel fasteners: one each

G. Records shall be submitted as follows:

1. An original and three copies of a completed P.E. Certification Form, signed and sealed by a professional engineer registered in the State of Montana. Certification form shall be as included at the end of this Section.
2. One set of reproducible erection and design drawings for the metal building and for the concrete foundation, sealed by the registered professional engineer.

#### 1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle prefabricated components, sheets, panels, doors, windows, and other manufactured items so they will not be damaged or deformed. Stack materials on platforms or pallets and cover with a weather-tight ventilated covering to keep the materials off the ground and away from moisture. Do not store materials in contact with other materials that will cause staining.

#### 1.05 QUALITY ASSURANCE

- A. Design, fabrication, and erection of the building shall conform to the latest edition of the following codes and standards:
1. American Concrete Institute (ACI)
    - a. ACI 318 - Building Code Requirements for Structural Concrete
  2. American Institute of Steel Construction (AISC)
    - a. Specification for Structural Steel Buildings - Allowable Stress Design and Plastic Design; Code of Standard Practice for Steel Buildings and Bridges; Specification for Structural Joints Using ASTM A325 or A490 Bolts
  3. American Iron and Steel Institute (AISI)
    - a. Specification for the Design of Cold-Formed Steel Structural Members
  4. American Society for Testing and Materials (ASTM)
    - a. ASTM A36 - Standard Specification for Carbon Structural Steel
    - b. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

- c. ASTM C423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
  - d. ASTM D2244 - Standard Test Method for Calculation of Color Differences From Instrumentally Measured Color Coordinates
  - e. ASTM D3841 - Standard Specification for Glass-Fiber-Reinforced Polyester Plastic Panels
  - f. ASTM D4214 - Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films
  - g. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials
- 5. 1997 Uniform Building Code
  - 6. All federal; State of Montana; City of Libby, Montana; and Lincoln County requirements
  - 7. Metal Building Manufacturers Association (MBMA)
    - a. Metal Building Systems Manual
  - 8. Underwriters Laboratories Inc. (UL)
    - a. Standard 580, Tests for Uplift Resistance of Roof Assemblies
  - 9. Factory Mutual Research Corporation (FM)
    - a. Design Guidelines

#### 1.06

#### QUALIFICATIONS

- A. All building components shall be provided by a single building manufacturer continuously engaged in providing similar structures for the last 5 years.
- B. The building manufacturer shall be Category MB certified by the American Institute of Steel Construction (AISC).
- C. Erection of the metal building and its components shall be by a builder authorized by the manufacturer and having at least 5 years experience in the construction of such structures.

#### 1.07

#### DESIGN CRITERIA

- A. Building shall be designed in accordance with the applicable Sections of the latest edition of the AISC Specification for Structural Steel Buildings, and the AISI Specification for the Design of Cold-Formed Steel Structural Members.
- B. Building shall be designed for the following loads, in addition to the stationary weight of the building. Reduction of loads due to tributary loaded areas will not be permitted.
- C. Design Loads

1. Roof Live Load = 20 psf (No reductions allowed)
  2. Roof Snow Load = 57 psf; drift loads shall be considered in accordance with UBC Appendix Chapter 16, Division I, using a ground snow load of 63 psf.
  3. Wind Loads: Basic Wind Speed = 80 miles per hour; Exposure C, I = 1.00.
  4. Seismic Loads: UBC Seismic Zone; 2B, Soil Profile Type D, I = 1.00.
  5. Collateral Loads: A uniform roof load of 5 psf shall be included, to account for miscellaneous suspended accessories.
- D. Load combinations shall be as specified in the MBMA Metal Building Systems Manual and as required by the local building code, and shall be in accordance with the following requirements:
1. Include full collateral loads with seismic.
  2. Do not include collateral loads in load combinations where dead load offsets other load effects (such as uplift due to wind load).
- E. Consideration shall be given to the effects of unbalanced loading and snow drifting on the structure.
- F. Column reactions shall be vertical and horizontal only. No bending moments shall be transferred at the column bases.
- G. Deflection limitations:
1. Deflection of primary structural roof framing members shall not exceed 1/240 of their span.
  2. Deflection of secondary structural roof members and of wall and roof panels shall not exceed 1/180 of their span.
- H. Concrete foundation shall be designed in accordance with ACI 318. Maximum soil bearing pressure shall not exceed 1500 psf. Footings shall extend 3-feet below finished grade.

## 1.08 DESIGN CALCULATIONS

- A. The builder shall have on file a complete design analysis of all structural components for a minimum of 5 years following the date of the purchase order for the building, and shall be prepared to furnish copies during the 5-year period described, upon request.

## 1.09 WARRANTY

- A. The metal panel coating system shall be warranted not to blister, peel, crack, chip, or experience material rust through for a period of 20 years.
- B. The roofing system shall be warranted against leaks for a period of 10 years.

## PART 2 PRODUCTS

### 2.01 BUILDING DESCRIPTION

- A. One each ADA-compliant standard dimension 8-ft by 12-ft metal sheathed building.
- B. One entry door, clear tempered safety glass for windows, one sliding window on scale side, provide windows on three sides.
- C. High output heater for winter operation.
- D. 120V air conditioner.
- E. Fluorescent lighting interior, twin flood lamps exterior (one mounted on each end of building).
- F. Minimum of two interior 100V receptacles.
- G. Minimum R-19 insulation throughout, including floor.
- H. Anchored to concrete foundation.
- I. Utility service entrance (weatherproof).

### 2.02 GENERAL

- A. All buildings shall be as manufactured by Parkline, Inc., Winfield, West Virginia; Steelox Building Systems, Mason, Ohio; or equal.
- B. Each building shall be supplied complete with all necessary component parts, including foundation anchors, to form a complete building system and all parts shall be new and free from all defects or imperfections.
- C. The building layout and dimensions shall be submitted to the CO/COTR for approval. The building width and length shall be measured from the outside of the building wall panels and the height of the building shall be the distance measured from the bottom surface of the base channel to the exterior juncture of the roof and sidewall panels.
- D. The building supplier shall supply a complete set of building erection drawings showing a step-by-step construction sequence for the erection of the building. The erection drawings shall be prepared specifically for the building covered by these specifications and showing the location of all roof and wall accessories and the exact anchor bolt locations required for each accessory.
- E. Reinforced concrete shall conform to Section 03301.

### 2.03 SHED BUILDING TYPE

- A. Each building shall have a 1-1/2-in pitch interlocking panel roof system. Roof panels shall be attached to the wall cap through factory punched holes with #14 corrosion resistant fasteners.

- B. The roof system shall include a gutter and downspout system at the low sidewall, eave trim at the high sidewall, and matching rake trim at the building endwalls. All gutters and trim shall be galvanized steel prepainted Arctic White or Roman Bronze.
- C. Transmission of horizontal wind loads across the building shall be made through the panel roof system and no separate roof or wall diagonal bracing shall be required.
- D. Where required for proper transmission of lateral wind loads, structural frame windbents shall be installed. Windbents shall consist of a prime painted column and rafter bolted assembly of steel conforming to ASTM A36 specifications.
- E. The building roofline shall be finished with nominal 26-gauge factory painted rake trim having matching ridge and eave cornices. Color of rake trim and cornices shall be as selected by CO/COTR.

## 2.04 WALL PANEL DESIGN

- A. Exterior wall panels of the building shall be a single continuous length from the base channel to the roofline of the building at the sidewalls and endwalls of the building except where interrupted by wall openings.
- B. Wall panels shall be 16-in wide with a 3-in deep inward turned interlocking side rib. Wall panels shall contain two 3/4-in deep by 3-1/8-in wide fluted recesses, each starting 2-7/16-in from the panel edge.
- C. Wall panels shall be fastened internally to the base channel and eave cap of the building with 3/8-in diameter electro-galvanized machine bolts placed within the panel interlock. The fastening system shall be designed so that no wall fasteners are exposed on the exterior surface of the walls.
- D. Wall panels shall be nominal 24-gauge galvanized steel conforming to ASTM A653 specifications with the galvanized coating conforming to G90 (1-1/4-oz commercial) standards. Minimum yield strength of panel material shall be 40,000 psi. Panel material shall be embossed with a random pattern pebble embossure of approximately 0.007 to 0.008 depth.
- E. All exterior surfaces of the galvanized steel wall covering and exterior trim shall receive a factory, roller applied, paint coating having an exterior coating thickness of 0.8- to 1.2-mils dry film thickness. The finish coat for wall panels shall be a siliconized polyester formulation of the color selected by the CO/COTR.
- F. The wall panel color coating shall carry a low fire hazard rating equal to a Class 1 material as defined by Factory Mutual. The panel coating shall have achieved a Flame Spread Index of 0 and a Fuel Contributed Index of 5 or less when tested in accordance with ASTM E84 test procedures.
- G. Exterior color coatings shall meet the following performance standards after 10 years continuous exposure in a "normal" atmospheric condition not containing corrosive fumes such as chemicals or salt spray.
  - 1. Panels shall show no evidence of blistering, peeling, or chipping.

2. Panels shall not show surface chalking in excess of the No. 6 rating established by ASTM D4214.
3. Panels, after cleaning, shall not show color change in excess of five NBS units when measured in accordance with the ASTM D2244 standard.

## 2.05 ROOF PANEL DESIGN

- A. Roof panels shall be supplied in a single continuous length from eave line to ridge line and shall be designed to tightly interlock so that no fasteners are required at intermediate points along the panel side laps.
- B. Roof panels shall be 16-in wide with a smooth surface between the interlocking side ribs. The interlocking rib shall be a minimum 3-in high and shall be turned upward. All roof panels shall be factory punched for connection at the eave line of the building.
- C. There shall be no fastener penetrations through the roof covering except at eave lines, ridge lines, and roof accessory openings such as skylights and ventilators.
- D. Roof panels shall be nominal 20-gauge galvanized steel conforming to ASTM A653 specifications with the galvanized coating conforming to G90 (1-1/4-oz) standards. Minimum yield strength of the panel material shall be 50,000 psi.
- E. Roof panels shall receive a factory, roller applied, paint coating having an exterior coating thickness of 0.8- to 1.2-mils dry film thickness.
- F. The roof panel color coating shall carry a low fire hazard rating equal to a Class 1 material as defined by Factory Mutual. The panel coating shall have achieved a Flame Spread Index of 0 and a Fuel Contributed Index of 5 or less when tested in accordance with ASTM E84 test procedures.
- G. The finish coat shall be a white polyester formulation that will meet the following performance standards after 10 years' continuous exposure in "normal" atmospheric conditions not containing corrosive fumes such as chemicals or salt spray.
  1. Panels shall show no evidence of blistering, peeling, or chipping.
  2. Panels shall not show surface chalking in excess of the No. 6 rating established by ASTM D4214.
  3. Panels, after cleaning, shall not show color change in excess of six units when measured in accordance with the ASTM D2244 standard.

## 2.06 GUTTERS

- A. The eaves of the building shall have a gutter and downspout system of nominal 26-gauge factory painted gutters of the same configuration as the building rake trim and 2-in by 3-in box type aluminum downspouts. Gutters and downspouts shall be the same color as the building rake trim and shall be complete with all required outlet drops, elbows, and connecting hardware.

## 2.07 EAVE TRIM



- A. The eaves of the building shall have a nominal 26-gauge factory painted eave trim of the same configuration and color as the building rake trim. The eave trim shall allow free passage of roof drainage.

#### 2.08 ENDWALL ROOF OVERHANG

- A. The interlocking roof panels shall extend 8-in outside of the building endwalls. The overhang shall be supported by a continuation of the ridge assembly and channel supports at the eave lines.

#### 2.09 SIDEWALL ROOF OVERHANG

- A. The interlocking roof panels of the building shall overhang 6-in outside of the building sidewalls. The roof overhang shall consist of a continuation of the building roof panels and shall not require any supporting beams, purlins, or columns. All panels shall be prepunched for connection to the building eave cap.

#### 2.10 ROOF INSULATION

- A. Roof insulation shall consist of 48-in wide, 2-in thick, 0.6-lb density fiberglass faced on its exposed side with a white vinyl facing. The faced insulation material shall have a UL Flame Spread Rating of 25 when tested in accordance with UL 723 or ASTM E84 procedures.
- B. Insulation shall be supported at the roof line by means of mechanical clips spaced on maximum 4-ft centers and shall be sealed by means of a 2-in side tab on the facing.
- C. The "U" value through the insulated roof shall be a maximum of 0.15 Btu/ft<sup>2</sup> when measured in accordance with the "zone method" contained in ASHRAE Handbook of Fundamentals, 1981 edition.

#### 2.11 FORMED WALL LINER

- A. The interior of the metal walls shall be lined with galvanized steel panels, prepainted white. The liner panels shall be 32-in wide with a 1/4-in deep by 1-in wide rib on 8-in centers and shall be fastened to the wall panel ribs with #8 self-drilling fasteners, prepainted white.
- B. The liner system shall be furnished complete with white base molding and white trim.
- C. The wall system shall include 3-in thick unfaced fiberglass insulation. The "U" value of the finished wall system shall be 0.16 Btu/ft<sup>2</sup> when measured in accordance with the "zone method" contained in ASHRAE Handbook of Fundamentals, 1981 edition.
- D. The liner shall have 1/8-in diameter perforations spaced on 3/8-in staggered centers. The complete wall system shall have been certified by an independent testing laboratory to have a minimum NRC rating of 0.90 when tested in accordance with ASTM C423 standards.

#### 2.12 HOLLOW METAL DOORS

- A. All doors shall be 1-3/4-in thick flush type. Door panels shall be nominal 20-gauge galvanized steel reinforced by lamination to a honeycomb core enclosed with a

continuous 16-gauge steel perimeter channel. The hinge reinforcement shall be nominal 11 gauge and the lock reinforcement shall be nominal 16 gauge. Door panels shall be projection welded to the perimeter channels on maximum 5-in centers.

- B. Door frames shall be 4-3/4-in deep double rabbeted type of nominal 16-gauge galvanized steel.
- C. Doors and frames shall be factory painted with one coat of baked on primer. All doors shall be preassembled in their frames with all hardware, except doorknobs, installed on door leaf. 6-ft-0-in by 7-ft-0-in double swing doors require some field assembly.

## 2.13 DOOR HARDWARE

- A. Door hardware shall consist of:
  - 1. Three 4-1/2-in by 4-1/2-in steel hinges per ANSI A8132 US26D (626) Satin Chrome Finish with non-removable pins.
  - 2. 1 1/16-in wide by 5/8-in high extruded aluminum threshold.
  - 3. 3/16-in by 1/2-in polyurethane and vinyl weatherstripping.
  - 4. Mortise cylinder lockset per ANSI A156.13, Series 100, Grade 1, Function F13, US26D (630), Satin Chrome Finish.
  - 5. Cylindrical key in knob lockset per ANSI A156.2, Series 4000, Grade 2, Function F81, US32D (630), Satin Chrome Finish.
  - 6. Passage set per ANSI A156.2, Series 4000, Grade 2, Function F75, US26D (626), Satin Chrome Finish.
  - 7. Door closer is certified to conform to ANSI 156.4, Grade 1, and meets exterior barrier free codes in Aluminum Lacquer Finish.
  - 8. Rim type crossbar panic device per ANSI A156.3, Type 1, Grade 1, Function 05, with US27 (627) Satin Aluminum Finish.
  - 9. Adjustable blade louver and 18 by 14 mesh insect screen.
- B. Section shall be removable by unbolting from the inside of the building.

## 2.14 HORIZONTAL SLIDING WINDOWS

- A. Sliding windows shall be furnished factory glazed and complete with all attaching hardware. The window unit shall be factory assembled for single unit installation.
- B. All window sash sections shall be of 6063-T5 extruded aluminum with a minimum thickness of 0.062-in and shall be color finished in white or bronze baked enamel. Windows shall meet or exceed Architectural Aluminum Manufacturers Association Specifications HS-A2-HP.
- C. Windows shall be glazed with 1-in insulated glass.

## 2.15 WALL OPENINGS

- A. The building manufacturer shall supply all necessary framing and connectors to structurally replace the panels removed by any wall opening. All trim and flashings required to make weathertight the unit placed in any opening shall be provided by the supplier of the unit being installed. Wall stiffeners shall be supplied to support equipment weight.

## 2.16 POWER ROOF VENTILATORS

- A. Power roof ventilators shall be 10-in diameter capable of 280-cfm air movement at 0.06-in static pressure and shall be equipped with high limit control adjustable thermostats. Power requirements of exhauster shall be 1 amp at 115 volts.
- B. An intake louver of 115-in<sup>2</sup> free air area shall be provided for each exhauster.

## 2.17 FIXED WALL LOUVERS

- A. Fixed louvers shall be of general purpose type of self-framing design. Finish shall be bright galvanize. All louvers shall be complete with #8 insect screening.

# PART 3 EXECUTION

## 3.01 GENERAL

- A. Building erection shall conform to the AISC Code of Standard Practice, the approved erection drawings, and the building manufacturer's installation instructions.
- B. The metal building shall not be erected until:
  - 1. The foundation design and details have been approved by the CO/COTR for the selected building system.
  - 2. The foundation work, plumbing, and other incidentals required to be constructed prior to the building installation have been inspected and approved by the CO/COTR.

## 3.02 PREPARATION

- A. The Contractor shall be responsible for final coordination of the Contract Documents with the information provided by the building manufacturer including, but not limited, to the following:
  - 1. Coordination of foundation dimensions, both horizontal and vertical, including overall building dimensions, door blockouts, required pilasters for building frame or endwalls, connections to foundation, and anchor bolt locations and quantities.
  - 2. Review of the required building erection sequence and scheduling of work by other trades.
  - 3. Final checks, both before placing of concrete and before commencing erection of the building, for conformance with the requirements of the building manufacturer's drawings.

### 3.03 ERECTION

- A. The Contractor is responsible for ensuring that all safety procedures for the erection of the building are strictly enforced and that any required ties, stays, and temporary supports are positioned as necessary to keep the structure stable and secure at all times.
- B. Provide non-metallic, non-shrink grout for setting of column base plates on the foundation, minimum 1-in in thickness.
- C. Throughout erection, remove rubbish, debris, and waste material.
- D. Provide all necessary repair and touch-up work required as a result of damage to building components due to required cut-outs, penetrations, or by mishandling prior to and during erection.
- E. The scale house building shall be erected immediately north of the truck scale.
- F. The scale house window shall be positioned to enable visual contact with the scale.

## PART 4 MEASUREMENT AND PAYMENT

### 4.01 MEASUREMENT

- A. No separate measurement will be made for the work of this section for the scale house self-framing metal building system.

### 4.02 PAYMENT

- B. Payment for the self-framing metal building system will be made at the Contract lump sum price for bid item "Scale House." Price and payment shall constitute full compensation for furnishing all plant, labor, material and equipment, and performing all operations necessary for completion of the work specified in this Section.

**END OF SECTION**

P.E. CERTIFICATION FORM

The undersigned hereby certifies that he/she is a professional engineer registered in the State of Montana and that he/she has been employed by

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to design a pre-engineered metal building, including the building foundation, for the [\_\_\_\_\_].

The undersigned further certifies that he/she has performed the design of the pre-engineered metal building and building foundation in accordance with the project specifications, and that said design is in conformance with all applicable local, state, and federal codes, rules, and regulations, and that his/her signature and P.E. stamp have been affixed to all calculations and drawings used in, and resulting from, the design.

The undersigned hereby agrees to make all original design drawings and calculations available to the Government's representative within 7 days following written request therefore by the Government.

P.E. Stamp \_\_\_\_\_  
P.E. Name \_\_\_\_\_

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Address

\_\_\_\_\_  
Contractor's Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Address

## SECTION 13200

### UNDERGROUND POLYETHYLENE STORAGE TANK

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and install, ready for service, the polyethylene underground storage tank for decontamination water storage as shown on the Drawings and as specified herein.

##### 1.02 RELATED WORK

- A. Section 01300 Submittals
- B. Section 02200 Earthwork - General
- C. Section 02223 Backfilling and Compaction
- D. Section 02231 Earthen/Granular Materials
- E. Section 03301 Concrete and Reinforcing Steel

##### 1.03 SUBMITTALS

- A. Submit, in accordance with Section 01300, complete sets of shop drawings showing details of fabrication of all materials and equipment furnished.
- B. Shop drawings shall show at least the following:
  - 1. Dimensions of tanks, fittings and attachments.
  - 2. Resin used.
  - 3. Service Conditions - chemical environment and temperature.
  - 4. Statement that fabrication is in accordance with this Section.
  - 5. A statement from the manufacturer that the materials and resin used are suitable for the intended service.
  - 6. Total weight of tank and fittings.
  - 7. Description of fabrication.
  - 8. Description of fittings showing details of construction and attachment to tank.
  - 9. Complete, detailed instructions on the installation of the tank, which reference specifically the methods for this installation.

- C. In the event that it is impossible to conform with certain details of this Section due to different manufacturing techniques, describe completely all non-conforming aspects.
- D. Submit shop inspection and test records as specified herein.

#### 1.04 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM)
  - 1. ASTM D638-02 - Standard Test Method for Tensile Properties of Plastics.
  - 2. ASTM D746-98e1 - Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact.
  - 3. ASTM D790-02 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
  - 4. ASTM D883-00 - Standard Terminology Relating to Plastics.
  - 5. ASTM D1505-98e1 - Standard Test Method for Density of Plastics by the Density-Gradient Technique.
  - 6. ASTM D1525-00 - Standard Test Method for Vicat Softening Temperature of Plastics.
  - 7. ASTM D1593-99 - Standard Specification for Nonrigid Vinyl Chloride Plastic Sheeting.
- B. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

#### 1.05 QUALITY ASSURANCE

- A. The tank shall be furnished by a single manufacturer who is fully experienced, reputable and qualified in the design and fabrication of polyethylene tanks.
- B. Should equipment which differs from this Section or as shown on the Drawings be offered and determined equal to that specified and shown, such equipment shall be acceptable only on the basis that any revisions to the design and/or construction of the structure and appurtenant equipment, etc, required to accommodate such a substitution shall be made at no additional cost to the Government and be as approved by the CO/COTR.

#### 1.06 DESCRIPTION OF EQUIPMENT

- A. The tank shall be constructed of polyethylene and shall be equipped with manhole openings and furnished with all accessories as specified herein and shown on the Drawings.

- B. The tank shall be as listed below. Tank accessories and fittings shall be sized and arranged as shown on the Drawings.

1. Name:

- a. Location: Underground at decontamination pad
- b. Material Stored: Water
- c. Capacity: 1,200 gallons
- d. Manhole Diameter: 2- 20 inch
- e. Height: 58 inches
- f. Width: 60 inches
- g. Length: 102 inches
- h. Minimum Wall thickness: 0.25 inch

1.07 DELIVERY, STORAGE AND HANDLING

- A. The Contractor shall require the manufacturer to assume responsibility for packaging to prevent normal transit and handling damage to the tank.
- B. Flange faces shall be protected from damage.
- C. All openings shall be covered to prevent entrance of dirt, water and debris.
- D. Tank shall be mounted on skids or protective framework so constructed as to provide easy handling for fork truck or similar devices and/or shall be provided with lifting lugs, cleats, etc, to permit handling by crane. Nozzles, manway or other fittings shall not be used for lifting.
- E. Instructions shall be provided for unloading and installation of the tanks.

1.08 REPRESENTATIVE SAMPLES

- A. Representative samples of the polyethylene tank shall be furnished. These samples shall be from plant production and shall be representative of quality, actual construction, workmanship, appearance and surface hardness of tank to be furnished. The CO/COTR may reject any tank which does not meet the standard of the representative samples.

**PART 2 PRODUCTS**

2.01 GENERAL

- A. Unless otherwise indicated, the plastic technology used for the polyethylene storage tank shall be in accordance with the definitions given in ASTM D883.



## 2.02 MATERIALS

### A. Plastic

1. The tank shall be molded from polyethylene.

### B. Fillers and Pigments

1. The plastic shall not contain any fillers. All plastic shall contain a minimum of 0.25 percent U.V. stabilizer and maximum of 0.50 percent. Pigments shall not exceed 1 percent of the weight of the tank. Color of the tank shall be gold or yellow.

### C. Cut Edges

1. All edges cut out i.e., manway, shall be trimmed to have smooth edges.

## 2.03 TANK CONSTRUCTION

### A. Appearance

1. The tank finished surface shall be as free as commercially practicable from visual defects such as foreign inclusions, air bubbles, pin holes and craters.

### B. Dimensions and Tolerances

1. The tank diameter shall be measured externally. Tolerance on the outside diameter including out of roundness shall be plus or minus 1 percent. Measurement shall be taken in a horizontal position. The knuckle radius at bottom to wall shall be a minimum of 1-1/2-in.

### C. Wall Thickness

1. The wall thickness shall conform to the provisions of Paragraph 1.06 above.

## 2.04 FITTINGS AND ACCESSORIES

### A. Tank shall be equipped with manhole extensions, gaskets and lids.

### B. Drain shall be siphon drain type.

### C. Water level indicator.

## 2.05 QUALITY CONTROL AND INSPECTION

### A. Quality Control Procedure

1. The tank manufacturer shall have quality control procedures adequate to ensure that all fabrications comply with this Section. Quality control shall include a final inspection. The objective of manufacturer's quality control and inspection procedure shall be to have the tank comply with this Section and the Drawings at

the time of first inspection, thus eliminating any need for rework by the manufacturer or a second inspection by the CO/COTR.

B. Manufacturer's inspection of the tank shall include the following:

1. Thickness measurements.
2. Measurements showing compliance with dimensions and tolerances and flanges and flatness of flanges.
3. Surface quality: Presence of pits, foreign inclusions, dry spots, air bubbles and pimples.

C. Manufacturer's Inspection Records

1. The manufacturer shall send a copy of his/her inspection records to the CO/COTR for review prior to inspection by the CO/COTR.

D. Inspection

1. Tank will be subject to inspection at the place of manufacture by the CO/COTR. The CO/COTR shall be informed at least 2 weeks in advance of the time when the tank will be ready for inspection.
2. Final acceptance by the CO/COTR may be contingent upon satisfactory further inspection upon arrival at job site.

E. Testing

1. The tank manufacturer shall perform the tests described below prior to shipping. Test samples shall be taken from the manway cut out area or where fittings are inserted in the tank. The CO/COTR may request that the tests be performed in his/her presence.
  - a. Impact Test - ASTM D746 Standard method shall be used in this test. Sample shall not shatter at 120 ft-lbs with sample at minus 20 degrees F for a 1/2-in wall thickness. For a wall thickness less than 1/2-in, the sample shall not shatter at 100 ft-lbs and minus 20 degrees F.
  - b. Hydrostatic Test - The tank shall be filled with water and checked for leaks no less than one hour after filling.

## **PART 3 EXECUTION**

### **3.01 INSPECTION AND TESTING**

- A. Prior to installation, the tank shall be field tested by filling with water. The tank and fittings shall hold water, without loss, or evidence of weeping or capillary action for a period of 24 hours prior to acceptance. The CO/COTR may also inspect the tank for defects, damage and conformance with this Section.

- B. Should any defects become evident during inspection, testing, or within the guarantee period, repair or replace any defective tank or fitting as approved by the CO/COTR.

### **3.02 INSTALLATION**

- A. Install the polyethylene tank in accordance with the Drawings and the manufacturer's instructions. It shall be the responsibility of the Contractor to coordinate the delivery and installation of the tank with that of other equipment and with the construction of the access roads and decon pad to minimize interference and/or delay.
- B. The tank shall be installed on an at least 6-inch layer of compacted gravel as shown on the Drawings, or other approved means as recommended by the manufacturer to provide for an even bearing.
- C. Tank shall be buried to a depth of 6 feet below ground surface and backfilled in 12-inch maximum layers.
- D. Manhole extensions/lids shall be backfilled to the ground surface.

## **PART 4 MEASUREMENT AND PAYMENT**

### **4.01 MEASUREMENT AND PAYMENT**

- A. No separate measurement and payment will be made for any work specified in this Section. The work specified in this Section will be considered incidental to the lump sum price for bid item "Decon Pad."

**END OF SECTION**

**LINCOLN COUNTY CLASS IV ASBESTOS LANDFILL  
PHASE II – LANDFILL OPERATION**

DIVISION 0    BID DOCUMENTS  
00300        Bid Form

DIVISION 1    GENERAL REQUIREMENTS  
01010        Summary of Work  
01014        Construction Sequence  
01025        Measurement and Payment  
01101        Safety, Health and Emergency Response Requirements  
01110        Environmental Protection Procedures  
01153        Change Order Procedures  
01300        Submittals  
01311        Construction Scheduling  
01400        Contractor Quality Control  
01500        Temporary Facilities  
01562        Dust Control  
01580        Project Identification and Signs  
01600        Delivery, Storage, and Handling  
01700        Contract Closeout  
01740        Warranties and Final Guarantee

DIVISION 2    SITE WORK  
02110        Clearing, Grubbing, and Stripping  
02141        Landfill Operation  
02200        Earthwork - General  
02210        Site Grading  
02223        Backfilling and Compaction  
02231        Earthen/Granular Material  
02270        Erosion and Sedimentation Control  
02618        Culverts  
02713        Stormwater Management  
02935        Site Surface Revegetation

Appendix A    Geotechnical Investigation Report  
Appendix B    Phase I Drawings

# **LINCOLN COUNTY CLASS IV ASBESTOS LANDFILL PHASE II - BID FORM**

**CONTRACTOR NAME:** \_\_\_\_\_

<b>Bid Item No.</b>	<b>General Description</b>	<b>Estimated Quantity</b>	<b>Unit</b>	<b>Unit Price (figures)</b>	<b>Unit Price (words)</b>	<b>Extended Price (figures)</b>	<b>Extended Price (words)</b>
001	Mobilization and demobilization	LS	\$ _____/LS			\$ _____	\$ _____
002	Topsoil stripping	CY	\$ _____/CY			\$ _____	\$ _____
003	Excavation	CY	\$ _____/CY			\$ _____	\$ _____
004	Landfill Operation	TON	\$ _____/TON			\$ _____	\$ _____
005	Low permeability cover soil placement and compaction	CY	\$ _____/CY			\$ _____	\$ _____
006	Topsoil placement	CY	\$ _____/CY			\$ _____	\$ _____
007	Erosion and Sedimentation Control	LS	\$ _____/LS			\$ _____	\$ _____
008	Stormwater Management	LS	\$ _____/LS			\$ _____	\$ _____
009	Revegetation	ACRE	\$ _____/ACRE			\$ _____	\$ _____

**TOTAL CONTRACT PRICE**

\$ \_\_\_\_\_  
(Figures)

\_\_\_\_\_ (words)

## SECTION 01010

### SUMMARY OF WORK

#### PART 1 GENERAL

##### 1.01 DEFINITIONS

- A. Government - the government shall be defined as the United States Environmental Protection Agency (U.S. EPA).
- B. Contracting Officer (CO) - the contracting officer shall be defined as Volpe National Transportation Systems Center (Volpe Center).
- C. Contracting Officer's Technical Representative (COTR) - contracting officer's technical representative shall be defined as an authorized representative from the Volpe Center's Architect/ Engineering (A/E) firm.
- D. Contractor - the contractor shall be defined as the firm selected to perform the work of this contract and all of its subcontractors, suppliers and vendors.
- E. Lincoln County - shall be the Lincoln County Environmental Health and Solid Waste Departments Director, Mr. Ronald L. Anderson.

##### 1.02 LOCATION OF WORK

- A. The work of this Contract is located Lincoln County, Montana at the Lincoln County landfill facility.

##### 1.03 SCOPE OF WORK

- A. Furnish all labor, materials, equipment, and incidentals required to construct and operate the Class IV asbestos landfill, as shown on the Drawings and as specified herein.
- B. The work is being performed as part of the U.S. EPA asbestos removal and restoration project in Libby, Montana.
- C. The construction of landfill cell A, weigh station, decontamination pad, access roads, stormwater and erosion control features, site fence and signage as shown on the Drawings, was performed by another Contractor under a previous contract for Phase I.
- D. The work of this contract includes topsoil stripping of the area for Cells B through M, constructing landfill Cells B through M, operating the landfill, including placement and compaction of asbestos containing waste materials and daily cover, operating the weigh station, constructing the landfill cell final cover, health and safety and equipment and personnel decontamination, dust control, and general landfill site maintenance, including stormwater management and erosion and sedimentation control. The Contract period is for 5 years.
- E. Landfill cells will be excavated and filled on an as-needed basis based on the rate of the asbestos removal action in Libby, Montana. Potential exists that all cells will not be

needed.

- F. Quantities represented are approximate and for informational purposes only, and should not be relied upon for completion of the bid form. The Drawings and specifications are intended to provide a general description of the work to be performed. The Contractor is required to verify all dimensions prior to starting the work.
- G. Work performed in this Contract includes:
1. Topsoil Stripping - This consists of removing the topsoil from the landfill cell area. A total of two feet of native topsoil shall be removed. Adequate topsoil (the uppermost soils) for the final cover seed bed layer will be segregated and stockpiled for use as final cover. The soil will be stockpiled as indicated on the Drawings. This area was previously cleared of trees by Lincoln County and grubbed under a previous contract. Remaining vegetation in the landfill area will be grubbed and stockpiled at the south end of the landfill area in an area approved by Lincoln County.
  2. Dust Control - This consists of the control of dust on the roads and in the landfill cells during operation by the use of a water truck. Water for site operation shall not be available onsite. It is the Contractor's responsibility to obtain water for dust control.
  3. Decontamination - This consists of the decontamination of equipment and personnel during landfill operation. All equipment and trucks which come into contact with asbestos containing material shall be decontaminated. Water for decontamination shall not be available onsite. It is the Contractor's responsibility to obtain water for decontamination. The Contractor shall provide a pump and hot water pressure washer for use in decontamination. The Contractor shall maintain the decontamination pad, including the pumping/removal of water, debris, and sediment from the sump. Water, debris and sediment shall be disposed of in a landfill cell.
  4. Health and Safety - This consists of the development and compliance with a site specific Health and Safety Plan and compliance with the Comprehensive Site Health and Safety Program.
  5. Weigh Station Operation - This consists of the operation of the scale and all recordkeeping for the asbestos landfill as outlined in the Landfill Operations Plan.
  6. Excavation of Landfill Cells - This consists of the excavation of landfill cells of dimensions 540 feet by 54 feet by 18 feet deep in the locations shown on the Drawings. The cells will be excavated at a 1:1 slope. The soil will be stockpiled in the location shown on the Drawings, designated by the CO/COTR, and approved by Lincoln County.
  7. Landfill Cell Filling and Compaction - This consists of the backfill, placement and compaction of asbestos waste materials and the placement and compaction of daily cover soil. The minimum expected volume of waste to be disposed of in the landfill is \_\_\_\_\_ cubic yards per year. The maximum volume of waste disposed of in the landfill is expected to be \_\_\_\_\_ cubic yards per year.
  8. Landfill Final Cover - This consists of the construction of the landfill cover which

includes an 18-inch low permeability soil layer, 6-inches of topsoil, fertilizer and seeding for revegetation.

9. Erosion Control – This consists of the maintenance, purchase and installation of silt fencing, hay bales and all other erosion control features indicated on the Drawings and in the Specifications.
10. Stormwater Management - This consists of the maintenance of drainage ditches, storm drainage culverts, primary and secondary sediment ponds and other drainage features constructed under a previous contract, in addition to management of stormwater runoff during construction activities.
- H. Site Maintenance - This consists of maintaining the fencing, gate, and signage, site security during operating hours, and general site operation and maintenance.
- I. The work described in the Drawings and specifications will be constructed on Lincoln County property adjacent to the existing Lincoln County Class II landfill.

#### 1.03 WORK BY OTHERS

- A. The following work will be performed by others prior to the start of the work of this Contract.
- B. Lincoln County has cut and removed all trees during Phase I.
- C. Geotechnical investigations were conducted by the COTR in June 2002. The investigation report and testing results are included in Appendix A.
- D. Phase I construction including construction of landfill cell A, weigh station, decontamination pad, access roads, stormwater and erosion control features, site fence and signage as shown on the Drawings will be completed prior to the start of the work of this contract by another Contractor. Phase I Drawings are included as Appendix B.
- E. The following work will be performed by others after the completion of the work of this Contract.
  1. Lincoln County will operate of the landfill scale following the closure of the Class IV asbestos landfill.
- F. The following work may be performed by others concurrently with the work of this Contract.
  1. Air monitoring will be performed by the COTR's team subcontractor Pacific Environmental Services.
- G. Collection of groundwater samples from the site monitoring wells by the COTR.

#### 1.04 CONTRACTOR'S USE OF SITE

- A. Contractor shall limit the use of the site for his/her work and for storage to allow for:
  1. Work by other contractors.



2. Access by Lincoln County personnel.
  3. Operation of existing Lincoln County Class II and III landfill.
- B. Coordinate use of site with other contractors and CO/COTR.
- C. Contractor shall assume full responsibility for security of all his/her and his/her subcontractors materials and equipment stored on the site.
- D. If directed by the CO/COTR, move any stored items which interfere with operations of the Lincoln County Class II and III landfill or other contractors.
- E. Obtain and pay for use of additional storage or work areas if needed to perform the work.

1.05 SURVEY INFORMATION

- A. Information regarding the site survey and coordinate system is provided on Drawing No. C-1.
- B. Requirements for the Contractor's professional land surveyor, temporary benchmarks, baselines, and documentation are provided on Drawing No. C-1.
- C. Topography shown on the Drawings was obtained by Aerial survey conducted in April 2002 by Horizons, Inc. with survey control provided by JRS Surveying.

**END OF SECTION**

## SECTION 01014

### CONSTRUCTION SEQUENCE

#### PART 1 GENERAL

##### 1.01 SITE CONDITIONS

- A. Several areas of construction under this contract must be coordinated with ongoing site operations activities. The Contractor shall be responsible for coordinating construction activities under this Contract in a logical manner in compliance with the overall order of work noted herein that will result in the timely completion of this project. The Contractor will coordinate his/her activities with the CO/COTR to allow access to project areas as may be necessary for testing, inspection, construction, monitoring, maintenance, or observation. The Contractor will also coordinate his/her activities with other Contractors to allow orderly and timely completion of the work. Lincoln County at this time operates a Class II landfill adjacent to the site of the Class IV landfill cell. This operation will continue during the Class IV asbestos landfill construction contract.
- B. When access through construction areas must be disrupted, Contractor will provide alternate acceptable access for the other Contractors.
- C. Contractor is required to coordinate his/her activities in the interface or common areas with these other Contractors.
- D. In general, no work which affects, or could affect, operations of any site facilities shall be performed without a specific detailed plan by the Contractor approved in advance by the CO/COTR and the Government.

##### 1.02 WORK SEQUENCE

- A. Perform work in a sequence to facilitate completion of the work in the Contract time. Completion dates of various stages of work as well as the final planned work sequence, shall be in accordance with the approved construction schedule submitted by the Contractor.

##### 1.03 CONSTRUCTION CONSTRAINTS

- A. The constraints to performance of the work required because of special sequencing with other parts of the work, calendar time constraints, and special testing, commissioning, and work procedures are identified in this Section. These constraints are in addition to the standard procedural constraints such as shop drawings, testing, commissioning, training, etc., and the above plant operational constraints. These constraints shall be included in the Contractor's construction schedule.
- B. Liquidated Damages for Failure to Meet Substantial Completion Schedule
- C. Liquidated damages may be imposed if the Contractor fails to meet the following deadline for completing the Work: All work required for the construction of landfill cells and all other work in the contract documents shall be substantially complete, as defined in the General Conditions, within ninety (90) consecutive calendar days of the Project start date identified by Government in the Notice to Proceed, such that disposal of asbestos contaminated materials can begin. Contractor shall pay the Government the amount of Two Thousand Five Hundred (\$2,500.00) dollars per day for each day beyond

either of the deadlines for substantial completion that the work is not substantially complete.

**D. Existing Site Facilities**

1. The existing site facilities, consisting of the operations related to the Lincoln county Class II landfill, will remain operational year round throughout the construction period.
2. The existing site facilities will be operated by Lincoln County.
3. All modifications to the site facilities shall be scheduled and coordinated with the CO/COTR and Lincoln County.

**E. Equipment and Personnel Decontamination**

1. Decontamination of equipment and personnel will occur at the decontamination pad to be constructed under this contract as shown in the Drawings. The decontamination pad will be used by the Contractor, Government, and CO/COTR. The Contractor shall coordinate access to the decontamination pad, subject to direction from the CO/COTR. The Contractor shall provide equipment to pump the decontamination pad water and shall clean out sediment from the decontamination pad and sump as required. Decontamination pad water and sediment shall be disposed of in the active landfill cell.

**1.04 PRECONSTRUCTION MEETING**

- A.** The preconstruction meeting will be held on a date to be determined by the Government upon award of the contract.
- B.** Attendance Required: Government, CO/COTR, Contractor, and invited agencies affected by the work.
- C. Agenda**
1. Review of schedules.
  2. Designation of personnel representing the Government, CO/COTR, Contractor, major subcontractors, and appropriate agencies; and exchange of emergency contact persons and telephone numbers.
  3. Procedures for submittals, substitutions, applications for payments, change orders, and Contract closeout.
  4. Government requirements.
- E.** CO/COTR will record minutes and distribute copies to participants and those affected by decisions made.

**END OF SECTION**

## SECTION 01025

### MEASUREMENT AND PAYMENT

#### PART 1 GENERAL

##### 1.01 MEASUREMENT AND PAYMENT ITEMS

- A. Measurement and Payment for all bid items except for Mobilization and Demobilization and landfill operations including costs for operators and equipment is defined in the individual sections in Division 2. No separate measurement and payment will be made for the work specified in Divisions 0 and 1 unless otherwise noted in the Bid Form and individual sections. The work specified in Divisions 0 and 1 will be considered incidental to the other bid items, unless otherwise noted. Any work shown on the Drawings, or specified, that is not specifically stated to be all or part of a particular bid item, will be considered incidental to other bid items.

##### 1.02 MEASUREMENT AND PAYMENT FOR MOBILIZATION AND DEMOBILIZATION

- A. This item shall include all costs for the mobilization and demobilization of all of the Contractor's equipment to the site for performing the required work. Payment will be made based on the lump sum bid and the following breakdown:
1. Sixty percent of the lump-sum price upon completion of the Contractor's mobilization at the work site
  2. The remaining 40 percent upon completion of demobilization
- B. The Government may require the Contractor to furnish cost data to justify this portion of the bid if the Government believes that the cost for this item does not bear a reasonable relation to the cost of the work in this Contract.
1. Failure to justify such price to the satisfaction of the Government will result in payment of:
    - a. Actual mobilization costs at the completion of mobilization
    - b. Actual demobilization costs at the completion of demobilization
    - c. The remainder of this item in the final payment under this Contract
  2. The Government's determination of the actual costs in paragraph B.1. of this section is not subject to appeal.

##### 1.03 MEASUREMENT AND PAYMENT FOR LANDFILL OPERATION

- A. The Contractor shall provide equipment operators capable of excavator and water truck operation, decontamination, and weigh station operation during the operation of the Class IV landfill.
- B. Operator wages shall conform to the current Montana Prevailing wage rates.

- C. The Contractor shall have on site at all times during waste disposal at the landfill, one extended reach excavator and one water truck with a minimum capacity of 1000 gallons for watering of roads and waste.
- D. The Contractor shall staff the landfill during operating hours and shall be responsible for landfill security at all times.
- E. The landfill operation Contract duration is 5 years. The minimum expected volume of waste to be disposed of in the landfill is \_\_\_\_\_ cubic yards per year. The maximum volume of waste disposed of in the landfill is expected to be \_\_\_\_\_ cubic yards per year.
- F. All costs for the Contractor's landfill operators and equipment will be measured for payment on a per ton basis for waste material disposed of in the landfill. The basis for the measurement will be the weigh station records.
- G. Payment for operators and equipment will be made at the per ton unit price for "Landfill Operation." Price and payment shall constitute full compensation for furnishing all labor and equipment, all maintenance related to the equipment, and all incidental costs thereto.

**END OF SECTION**

## SECTION 01101

### SAFETY, HEALTH, AND EMERGENCY RESPONSE REQUIREMENTS

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. This Section describes the responsibilities of the Contractor for safety, health, and emergency response. Government requires that work performed under this specification will not result in:
1. Injuries to employees or other persons.
  2. Employee exposures to health hazards above the occupational limits established by OSHA or ACGIH (full names provided below).
  3. Exposure of area residents to air contaminants above the levels established for general public exposure by EPA or the State.
  4. Significant increases in the levels of contaminants in soil, water, or sediment near the site.
  5. Violations of OSHA, EPA, or State regulations.
- B. Any disregard for the provision of these Health and Safety requirements may be deemed just and sufficient cause for termination of the Contract without compromise or prejudice to the rights of the Contractor.
- C. Maintain a comprehensive health and safety program that addresses lines of authority and responsibility for health and safety, medical monitoring, training, and equipment programs, and health and safety recordkeeping. Site-specific requirements are discussed elsewhere in this Section.
- D. Contractor shall abide by the Libby Asbestos Removal Project Comprehensive Site Health and Safety Program (CSHASP).

##### 1.02 BACKGROUND

- A. Construction of landfill cell A was performed previously under a separate contract in Level D personal protective equipment (PPE). Operation of the Class IV asbestos landfill will be performed in Level C PPE as outlined in the Contractor's Health and Safety Plan. Once the landfill becomes operational, only OSHA 40-hour hazardous waste trained personnel will be allowed on site.

##### 1.03 SUBMITTALS

- A. Submit the following documentation within 15 days of Notice to Proceed.
1. Name of Contractor's Health and Safety Officer.

2. A statement reflecting the names of Contractor's employees who have completed 40-hour hazardous waste operations training and medical requirements required for hazardous waste employees.
- B. Submit the following information at or prior to the Pre-Construction Conference.
1. A Safety Health and Emergency Response Plan, which addresses the issues described in paragraphs 1.08 B. and C. of this Section.
  2. Certification of health and safety officer's authority.
  3. Name and address of Contractor's consulting physician.
  4. Name and resume of health and safety professional.
  5. Personal protection (including respiratory) programs.
- C. Refer to Section 01300 for additional requirements.

#### 1.04 REGULATORY REQUIREMENTS

- A. Contractor's health and safety practices shall follow the standards and guidelines established in the publications listed below. These standards are incorporated in this Section by reference:
1. Safety and Health Standards 29 CFR 1910 (General Industry), U.S. Department of Labor, Occupational Safety and Health Administration (OSHA). Hereafter, referred as "29 CFR 1910."
  2. OSHA 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response, U.S. Dept. of Labor, OSHA.
  3. OSHA 29 CFR 1910.146 Permit-Required Confined Spaces, U.S. Dept. of Labor, OSHA.
  4. OSHA Safety and Health Standards 29 CFR 1926 (Construction Industry), US Department of Labor, OSHA.
  5. Standard Operating Safety Guides, U.S. Environmental Protection Agency (EPA), Office of Emergency and Remedial Response PB92-983414.
  6. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, US Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Institute for Occupational Safety and Health (NIOSH).
- B. This Section implements and amplifies procedures and requirements of the above referenced regulations and guidelines. These publications define terms and establish procedures discussed in this Section, which incorporates them by reference. Where conflicts arise between the requirements of this Section and the above-listed standards and guidelines, the most restrictive requirement shall apply.

#### 1.04 CONTRACTOR'S PERSONNEL

- A. Assign persons to fill each of the following roles. An individual can fill as many roles for which he or she is qualified.
- B. Health and Safety Officer - Contractor shall designate an employee or company principal as its health and safety officer (HSO). This HSO must have the authority to command sufficient resources to safely perform the Work. Contractor shall identify its HSO in the site safety and health plan. Government will direct health and safety correspondence to this HSO.
- C. Health and Safety Professional - Designate a health and safety professional to take responsibility for evaluating hazards of the site and controls that will appear in the site safety plan. This professional shall be certified as either a certified industrial hygienist or a certified safety professional. This Section calls this person a "CIH."
- D. Site Health and Safety Coordinator
  - 1. Designate a Site Health and Safety Coordinator (SHSC) for this project. Day-to-day industrial hygiene support, including training and site safety inspections, shall be provided by the SHSC. The SHSC shall have the authority to stop onsite operations whenever conditions threaten the health or safety of employees. The SHSC shall remain onsite during all project operations.
  - 2. The SHSC shall report directly to the HSO or the CIH. The SHSC shall have: a sound working knowledge of occupational safety and health regulations, experience on the type of project described in these specifications, and training in air monitoring practices and techniques.
- E. Onsite Operations Manager - The onsite activity of this project shall be under the control of an onsite operations manager. This manager shall have demonstrable experience with hazardous materials operations.
- F. Onsite Workers - All onsite personnel shall possess the following credentials:
  - 1. Have completed a 40 hour health and safety training course or refresher training course within the last year.
  - 2. Have completed a medical monitoring exam within the last year.
  - 3. Have passed a fit test for any respirator they may wear on the site.

#### 1.05 MEDICAL SURVEILLANCE

- A. Utilize the services of a licensed physician board-certified or board-eligible in occupational or internal medicine to provide a medical surveillance program as required by OSHA regulations. The name of this physician shall be provided to the CO/COTR along with a certified letter stating he is aware of the hazards to be encountered by onsite personnel during the project.
- B. Obtain the occupational physician's written medical opinion as to whether each employee has any detected medical conditions which would place him or her at increased risk of health impairment from work on this project. The occupational physician shall certify whether or not the employee is medically fit to utilize the respiratory protective devices



required for project operations. No employee shall be permitted onsite inside the Class IV asbestos landfill fence until the Contractor has submitted medical certificates (such as Attachment 1) to the CO/COTR. These certificates shall have been completed and signed within a year of the beginning of the project.

- C. In accordance with 29 CFR 1910.20, maintain all medical surveillance records for 30 years past employment and shall make these records available to the Government or regulatory agencies, as required.

#### 1.06 TRAINING

- A. All employees exposed to hazardous substances, health hazards, or safety hazards shall complete the employee training requirements listed below. Employees shall not participate in field activities until they have been trained to a level required by their job function and responsibility.
- B. Submit a statement indicating that personnel who will enter the work zone inside the Class IV perimeter fence understand they are working on a hazardous waste site, and are trained and qualified in compliance with 29 CFR 1910.120 and 29 CFR 1926.
- C. Submit a statement indicating that personnel who will enter confined spaces understand the hazards, and are trained and qualified in compliance with 29 CFR 1910.146.
- D. Maintain, at the work site, documentation that shows that each onsite employee or subcontractor has the appropriate health and safety training courses.
- E. At least one person who has been trained and certified in First Aid and CPR by the American Red Cross, or an equivalent organization, shall be present onsite during all project operations.
- F. Provide a site-specific training session for personnel scheduled to work onsite. This training shall consist of an initial health and safety briefing on the following information:
  - 1. Names of personnel and alternates responsible for site safety and health.
  - 2. Injury, illness, and other hazards present on the site.
  - 3. Safe use of engineering controls and equipment on site.
  - 4. Work practices by which the employee can minimize risks from hazards.
  - 5. Selection, use, care, and maintenance of personal protective equipment (PPE).
  - 6. Site control procedures, including log-in and log-out.
  - 7. Site decontamination procedures.
  - 8. Standard operating safety procedures.
  - 9. Site emergency response contingency plan.
  - 10. Confined spaces that have been identified on site.

11. Procedures needed for any confined space entries that may be part of the project.
- G. Develop a training sequence to inform visitors to the site of the hazards associated with the site; to explain emergency procedures; to train them in the use of protective gear required during the visit; and to verify they have received, prior to the site visit, the required preliminary training, and medical surveillance examinations. The CIH may delegate the day-to-day implementation of this policy to the SHSC.

#### 1.07 ACCIDENT OR INCIDENT REPORTS

- A. If an accident, an explosion or fire, or a release of toxic materials occurs during the course of the project, the CO/COTR shall be notified immediately and receive a written notification in accordance with State of Montana Department of Administration rules. Complete and submit to Government, an accident report addressing the required items, including:
  1. Name, organization, telephone number, and location of the Contractor.
  2. Name and title of the person(s) reporting.
  3. Date and time of the accident/incident.
  4. Location of the accident/incident, i.e., site location, facility name.
  5. Brief summary of the accident/incident giving pertinent details including type of operation ongoing at the time of the accident/incident.
  6. Cause of the accident/incident, if known.
  7. Casualties (fatalities, disabling injuries).
  8. Details of any existing chemical hazard or contamination.
  9. Estimated property damage, if applicable.
  10. Nature of damage, effect on contract schedule.
  11. Action taken by Contractor to ensure safety and security.
  12. Other damage or injuries sustained, public or private.

#### 1.08 HEALTH AND SAFETY PLAN

- A. Prepare a Safety, Health, and Emergency Response Plan (SHERP) that addresses each concern mentioned in this Section and other concerns the CO/COTR, Government, and Contractor deem necessary. The SHERP shall be site-specific and shall include measures to be taken by Contractor and subcontractor(s) to control physical and chemical hazards associated with site remediation. Contractor's standard policies may constitute much of this SHERP. Contractor's HSO shall sign and date the SHERP.
- B. The SHERP shall, at a minimum address the following elements: staff organization, responsibilities, and authorities; site description; hazard analysis for each project task and operation; general and site-specific training; PPE; medical surveillance; personal and

environmental exposure monitoring; standard operating safety procedures, engineering controls, and work practices; communications; illumination; site control measures; personnel hygiene and decontamination; equipment decontamination; emergency equipment and first aid; emergency response and contingency procedures; and logs, reports, and recordkeeping.

- C. An Accident Prevention Plan (APP) shall appear in the SHERP. This APP shall address methods for avoiding the physical hazards (e.g., open manholes). Contractor and subcontractor(s) shall follow the approved APP throughout construction. The APP shall address, at a minimum, the following items:
1. Safety Meetings
  2. Fire Prevention and Protection
  3. Walking and Working Surfaces
  4. Site Housekeeping
  5. Mechanical Equipment Inspection
  6. Sanitation
  7. Daily Safety Inspections
  8. Accident Reporting
- D. Prepare and submit a confined space entry procedure which shall address the following elements: staff organization, responsibilities, and authorities; permit preparation, approval, and cancellation; training; PPE; medical surveillance; personal and environmental exposure monitoring; standard operating safety procedures, engineering controls, and work practices; communications; illumination; provision of an attendant; personnel hygiene; emergency removal and first aid; and recordkeeping. Contractor's standard policies may constitute this procedure.
- E. Submit the SHERP and confined space entry procedure to the Government at or prior to the Pre-Construction Conference. Government will review them and return them to Contractor with comments. Incorporate Government's comments and re-submit the SHERP or procedure. This review cycle shall continue until the Government gives notice to proceed with the project. At that time, indicate its commitment to following the SHERP by an affidavit, signed by the company health and safety officer.
- F. Contractors that seek to modify any portion or provision of the SHERP, shall request a modification from Government in writing. The requested modification will not be implemented until authorized in writing by the Government.
- G. Quickly notify Government, both verbally and in writing, of any unforeseen hazard, safety related factor, or condition they observe during the work at this site. In the interim, take prudent action to establish and maintain safe working conditions and to safeguard employees, the public, and the environment in accordance with the Health and Safety Plan.
- H. Should Government require modification of any portion or provision of the SHERP, it will

notify the Contractor in writing of such modifications.

#### 1.09 SITE-SPECIFIC EQUIPMENT PRACTICES

- A. Supply all protective clothing and equipment necessary for their personnel and maintain it in accordance with the manufacturer's specifications. All equipment shall carry applicable MSHA/NIOSH approvals. Specific equipment requirements must be stated in the Contractor's Plan. The CO/COTR may reject the use of the equipment if, in his or her opinion, it provides less protection than that specified in the SHERP.
- B. Maintain a sufficient supply of PPE for two Government employees per day for the duration of the project. Government will provide respiratory protection and safety shoes for its employees.
- C. Personnel shall not enter an area or perform a task for which a respirator might be required unless they have passed a fit test with the make and model of respirator in use. Respirators shall not be interchanged between workers without cleaning and sanitizing. Canisters and filters shall be changed daily.
- D. Prescription eyeglasses worn on site must meet ANSI standard Z87.1. Provide prescription lens inserts for employees who need to wear full face respirators. Personnel shall wear the protective equipment specified in the SHERP for each onsite task.
- E. All PPE worn onsite will be decontaminated or properly disposed of at the end of the work day.
- F. Operations under this Contract will require work exposure to potentially hazardous materials. Provide and assure the wearing of all necessary PPE for its onsite personnel. All personnel entering the work area shall don, at a minimum, Level D PPE.
- G. The initial minimum level of protection for each major site activity shall be described in the SHERP. Conform to the initial level of protection unless an upgrade or downgrade is warranted by air monitoring data and an evaluation of work practices/controls.
- H. Downgrade level of protection only when (1) the Site Health and Safety Coordinator (SHSC) makes the change based on site activity, air monitoring of contaminant levels, and work place practices as specified in the SHERP, or (2) the Certified Industrial Hygienist (CIH) approves the change with the knowledge of the CO/COTR.
- I. Respiratory protective equipment shall carry National Institute of Occupational Safety and Health approval for the contaminants of concern. Do not switch respirators or facepieces between employees without cleaning between uses.
- J. The SHERP shall include a written respirator policy which meets 29 CFR 1910.134 and establishes procedures to assure daily cleaning and maintenance of respirators. Breathing air shall be Compressed Gas Association Grade D or better. Cartridges and filters shall be changed at least daily. Respirators and filter cartridges shall be stored in a place and manner that they cannot become contaminated with hazardous materials.
- K. All personnel who may wear a respirator shall be qualitatively fit-tested with irritant smoke, isoamyl acetate, or equivalent methods according to OSHA Standard 29 CFR 1926.58, Appendix C at least semiannually. Quantitative fit-testing exceeds this requirement. Employees shall perform negative pressure fit-checks in accordance with

manufacturers' recommendations on air purifying respirators each time they are put on. No facial hair which interferes with a satisfactory fit of a respiratory mask-to-face-seal is allowed on personnel required to wear respiratory protective equipment. A "two-day" growth of beard is considered to interfere with the fit of the respirator.

#### 1.10 STANDARD SAFETY OPERATING PROCEDURES

- A. The SHERP shall contain a section outlining Standard Safety Operating Procedures to be implemented for this project. Personnel shall observe the following contamination control rules while onsite.
1. Eating, drinking, smoking, chewing gum or tobacco, and other practices that increase the probability of hand-to-mouth transfer and ingestion of material is prohibited in any area designated contaminated.
  2. Hands and face shall be thoroughly washed upon leaving the work area and before eating, drinking, urinating, or other activities.
  3. Whenever decontamination procedures for protective clothing is in effect, the entire body shall be thoroughly washed as soon as possible after the protective clothing is removed.
  4. Medicine and alcohol can increase the effects of exposure to toxic chemicals. Therefore:
    - a. Personnel using prescription drugs shall inform the doctor who prescribed them of their potential contact with toxic materials.
    - b. Personnel who take over-the-counter drugs within a day before work on a site must inform the SHSC of the warnings listed on the drug's container (the part of the label that says, for example, "Do not take this medication if you are operating a motor vehicle").
    - c. Alcoholic beverage intake will be prohibited during project operations. Personnel under the influence of alcohol or recreational or illegal drugs will not be allowed on site.

#### 1.11 GENERAL HEALTH AND SAFETY CONCERNS

- A. Each work day, Contractor's SHSC shall inspect the site and the work practices followed on the site to determine whether the SHERP is being followed.
- B. When work area temperatures exceed 80°F (75°F when workers wear synthetic coveralls), take steps to control heat stress among its personnel. When temperatures are lower than 32°F, take steps to control cold stress among its personnel. Such steps should include; dry layered clothing, break shelters, and provision of heaters.
- C. Electrical installations and appliances used shall meet applicable National Electrical Code specifications, most recent addition. All electrical devices utilized by the Contractor or his subcontractors on this project shall be grounded and equipped with and utilize ground fault circuit interrupter (GFCI) protected outlets or extension cord sets. Electrical devices used in confined spaces that may contain flammable vapors shall be explosion-safe.

D. No Contractor employee may enter a confined space unless the procedures below are followed.

1. Pre-entry permits are preparation and reviewed.
2. Appropriate safety equipment is selected and provided.
3. Hazardous conditions are monitored per Health and Safety Plan.
4. Hazardous gases are ventilated from the space.
5. Rescue procedures and equipment are instituted.

#### 1.12 ENVIRONMENTAL REGULATIONS

- A. Establish a system to control access to hazardous work areas by persons who do not need to enter.
- B. Conduct operations and maintain site work areas so as to minimize the creation and dispersion of contaminants, dust, and sediment.
- C. Wastes, including water, shall be disposed as required by these Technical Specifications.

#### 1.13 EXPOSURE MONITORING

- A. Exposure monitoring shall be addressed in the safety, health, and emergency response plan. The exposure monitoring plan shall be designed to:
  1. Detect and quantify the contaminants and physical agents that may be a concern during these activities.
  2. Provide enough information to allow the site health and safety coordinator to recognize conditions that require changes in work practices or level of protection.
  3. Provide enough information to allow the site health and safety coordinator to recognize conditions that expose offsite populations to contaminants (including soil dust) or physical agents released during work activities.
- B. Provide all required exposure monitoring equipment and analysis. This equipment shall be operated only by personnel who have trained in its use. Maintain and calibrate the equipment according to manufacturer's instructions.
- C. Record exposure measurements and make them available to Government and CO/COTR upon request.

#### 1.14 EMERGENCY PREPAREDNESS

- A. In the event of a fire or sudden release of contaminants, personnel shall quickly evacuate the facility. Contractor's emergency response and contingency plan must present procedures Contractor will follow in the case of an injury or gross chemical exposure or in case Contractor observes an emergency unrelated to the field work.
- B. The emergency response and contingency plan for onsite and offsite emergencies, as

specified in OSHA Regulation 29 CFR 1910.120(1), shall address, at a minimum:

1. Pre-emergency planning.
  2. Personnel roles, lines of authority, training, and communication.
  3. Emergency contact names and telephone numbers:
    - a. Medical treatment facility and physician
    - b. Ambulance service's telephone number
    - c. Fire department's telephone number
    - d. Police department's telephone number
    - e. EPA and state spill control phone numbers
    - f. CO/COTR telephone number
    - g. Government telephone number
  4. Emergency recognition and prevention.
  5. Emergency alerting and response procedures.
  6. Evacuation routes and procedures.
  7. Safe distances and places of refuge.
  8. Specific procedures for handling personnel with excessive exposure to contaminated soils or asbestos containing waste materials.
  9. Personal protective equipment and emergency equipment.
  10. Emergency personnel and equipment decontamination.
  11. Emergency medical treatment and first aid.
  12. Directions to a nearby medical treatment facility.
  13. Site security and control for incidents.
  14. Procedures for dealing with fires, explosions, spills.
  15. Critique of response and follow-up.
- C. In the event of any emergency associated with this project, without delay alert the CO/COTR; and institute whatever measures which might be necessary to prevent any repetition of the conditions or actions leading to, or resulting in, the emergency.
- D. In the event of an injury or illness among the site personnel, the certified first aid practitioner onsite will take control. The injured or ill person will be transferred to the

medical facility designated in the SHERP.

- E. When an evacuation is necessary, all field team members will go to the reassembly point for that study area. The SHERP shall identify the reassembly points for contractor personnel in the event of an evacuation.
- F. The SHERP shall identify the method by which personnel will communicate in the event of an emergency. Communications with the office trailer, if it is outside vocal range, will be by radio. Communications between Contractor and other organizations will be over the telephone. A list of emergency telephone numbers must appear in the SHERP.
- G. Provide appropriate emergency equipment, including an industrial-type first aid kit that is approved by its consulting physician for injuries and illnesses which may occur on site. A 20-pound ABC-rated fire extinguisher shall be maintained onsite. Emergency retrieval equipment shall be provided for each confined space entry.
- H. All site support vehicles shall be equipped with route maps providing directions to the medical treatment facility. All drivers of the support vehicles shall become familiar with the emergency route and the travel time required at the beginning of project operations. One person certified in first aid and CPR shall be present onsite whenever active work operations occur.

**1.15 ASBESTOS HANDLING (The attached certificate is part of this Section)**

- A. Provide personal protection and procedures for handling asbestos, per all governing regulations.
- B. Contractor shall follow the CSHASP which outlines specific health and safety requirements for handling asbestos containing materials associated with the Libby Asbestos Removal Project.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

**PART 4 MEASUREMENT AND PAYMENT**

**4.01 MEASUREMENT AND PAYMENT**

- A. No separate measurement and payment will be made for the health and safety requirements specified in this Section. The work specified in this Section for health and safety will be considered incidental to work specified in other sections.

**END OF SECTION**



PHYSICIAN'S CERTIFICATION FOR EMPLOYEES

Name \_\_\_\_\_ Date of Exam \_\_\_\_\_

Firm \_\_\_\_\_

WORK ASSIGNMENT:

This is to certify that I, the undersigned licensed physician, have supervised a physical examination consistent with the requirements of OSHA 29 CFR 1910.120 for the above named individual for the above stated work assignment. I hereby certify that this individual is, in my opinion (complete 1, 2, and 3):

1.     ☐     Medically qualified to perform the stated work assignment.  
☐     Not medically qualified to perform the stated work assignment.
2.     ☐     Medically qualified to use respiratory protective devices for the stated work assignment.  
☐     Not medically qualified to use respiratory protective devices for the stated work assignment.
3.     ☐     NO RESTRICTIONS  
☐     RESTRICTIONS: Summarize below or attach summary.

Doctor's Signature \_\_\_\_\_

Printed Name \_\_\_\_\_

Address \_\_\_\_\_

Phone \_\_\_\_\_

## SECTION 01110

### ENVIRONMENTAL PROTECTION PROCEDURES

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. The work covered by this Section consists of furnishing all labor, materials, and equipment, and performing all work required for the prevention of environmental pollution in conformance with applicable laws and regulations, during and as the result of construction operations under this Contract. For the purpose of this Section, environmental pollution is defined as the presence of chemical, physical, radiological, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic and/or recreational purposes.
- B. The control of environmental pollution requires consideration of air, water, and land, and involves management of noise and solid waste, as well as other pollutants.
- C. Schedule and conduct all work in a manner that will minimize the erosion of soils in the area of the work. Maintain existing and provide additional erosion control measures such as diversion channels, sedimentation or filtration systems, berms, staked hay bales, seeding, mulching or other special surface treatments as are required to prevent silting and muddying of streams, rivers, impoundments, lakes, etc. All erosion control measures shall be in place in an area prior to any construction activity in that area. Specific requirements for erosion and sedimentation controls are specified in Section 02270.
- D. These specifications are intended to ensure that construction is achieved with a minimum of disturbance to the existing ecological balance between a water resource and its surroundings. These are general guidelines. It is the Contractor's responsibility to determine the specific construction techniques to meet these guidelines.

##### 1.02 APPLICABLE REGULATIONS

- A. Comply with all applicable federal, state, and local laws and regulations concerning environmental pollution control and abatement.

##### 1.03 NOTIFICATIONS

- A. The CO/COTR will notify the Contractor in writing of any noncompliance with the foregoing provisions or of any environmentally objectional acts and corrective action to be taken. State or local agencies responsible for verification of certain aspects of the environmental protection requirements shall notify the Contractor in writing, through the CO/COTR, of any noncompliance with state or local requirements. The Contractor shall, after receipt of such notice from the CO/COTR or from the regulatory agency through the CO/COTR, immediately take corrective action. Such notice, when delivered to the Contractor or his/her authorized representative at the site of the work, shall be deemed sufficient for the purpose. If the Contractor fails or refuses to comply promptly, the Government may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the Contractor unless it is later determined that the Contractor was in compliance.

#### 1.04 IMPLEMENTATION

- A. Prior to commencement of the work, meet with the CO/COTR to develop mutual understandings relative to compliance with this provision and administration of the environmental pollution control program.
- B. Remove temporary environmental control features, when approved by the CO/COTR and incorporate permanent control features into the project at the earliest practicable time.

#### PART 2 PRODUCTS - (NOT USED)

#### PART 3 EXECUTION

##### 3.01 EROSION CONTROL

- A. Provide positive means of erosion control such as shallow ditches around construction to carry off surface water. The Contractor shall maintain erosion control measures, such as siltation basins, hay check dams, and silt fencing. Offsite surface water shall be diverted around the site, to a downstream channel ahead of siltation barriers. Flow of surface water into excavated areas shall be prevented. At the completion of the work, temporary ditches shall be backfilled and the ground surface restored to original condition.

##### 3.02 PROTECTION OF STREAMS

- A. Care shall be taken to prevent, or reduce to a minimum, any damage to any stream from pollution by debris, sediment, or other material, or from the manipulation of equipment and/or materials in or near such streams. Water that has been used for washing or processing, or that contains oils or sediments that will reduce the quality of the water in the stream, shall not be disposed in the landfill cells or through the stormwater ditches and ponds. Such waters will be disposed off offsite in an appropriate manner as directed by the CO/COTR.
- B. The Contractor shall not discharge water from dewatering operations directly into any live or intermittent stream, channel, wetlands, surface water, or any storm sewer. Water from dewatering operations shall be pumped and discharged to the stormwater ponds shown on the Drawings.
- C. All preventative measures shall be taken to avoid spillage of petroleum products and other pollutants. In the event of any spillage, prompt remedial action shall be taken in accordance with a contingency action plan approved by the Montana Department of Environmental Quality. Contractor shall prepare and submit two copies of approved contingency plans to the CO/COTR.

##### 3.03 PROTECTION OF LAND RESOURCES

- A. Land resources within the project boundaries and outside the limits of permanent work shall be restored to a condition, after completion of construction that will appear to be natural and not detract from the appearance of the project. Confine all construction activities to areas shown on the Drawings.
- B. Outside of areas requiring earthwork for the construction of the new facilities, the Contractor shall not deface, injure, or destroy trees or shrubs, nor remove or cut them without prior approval. No ropes, cables, or guys shall be fastened to or attached to any

existing nearby trees for anchorage unless specifically authorized by the CO/COTR. Where such special emergency use is permitted, first wrap the trunk with a sufficient thickness of burlap or rags over which softwood cleats shall be tied before any rope, cable, or wire is placed. The Contractor shall in any event be responsible for any damage resulting from such use.

- C. Where trees may possibly be defaced, bruised, injured, or otherwise damaged by the Contractor's equipment, dumping or other operations, protect such trees by placing boards, planks, or poles around them. Monuments and markers shall be protected similarly before beginning operations near them.
- D. Any trees or other landscape feature scarred or damaged by the Contractor's equipment or operations shall be restored as nearly as possible to its original condition. The CO/COTR will decide what method of restoration shall be used and whether damaged trees shall be treated and healed or removed and disposed.
- E. All scars made on trees by equipment, construction operations, or by the removal of limbs larger than 1-inch in diameter shall be coated as soon as possible with an approved tree wound dressing. All trimming or pruning shall be performed in an approved manner by experienced workmen with saws or pruning shears. Tree trimming with axes will not be permitted.
- F. Climbing ropes shall be used where necessary for safety. Trees that are to remain, either within or outside established clearing limits, that are subsequently damaged by the Contractor and are beyond saving in the opinion of the CO/COTR, shall be immediately removed and replaced.
- G. The locations of the Contractor's storage and other construction buildings, required temporarily in the performance of the work, shall be cleared portions of the job site or areas to be cleared as shown on the Drawings and shall require written approval of the CO/COTR and shall not be within wetlands or floodplains. The preservation of the landscape shall be an imperative consideration in the selection of all sites and in the construction of buildings. Drawings showing storage facilities shall be submitted for approval of the CO/COTR.
- H. If the Contractor proposes to construct temporary roads or embankments and excavations for plant and/or work areas, he/she shall submit the following for approval at least 10 days prior to scheduled start of such temporary work.
  - 1. A layout of all temporary roads, excavations, and embankments to be constructed within the work area.
  - 2. Details of temporary road construction.
  - 3. Drawings and cross sections of proposed embankments and their foundations, including a description of proposed materials.
  - 4. A landscaping drawing showing the proposed restoration of the area. Removal of any trees and shrubs outside the limits of existing clearing area shall be indicated. The drawing shall also indicate location of required guard posts or barriers required to control vehicular traffic passing close to trees and shrubs to be maintained undamaged. The drawing shall provide for the obliteration of construction scars as such and shall provide for a natural appearing final condition of the area. Modification of the Contractor's approved drawings shall be made

only with the written approval of the CO/COTR. No unauthorized road construction, excavation or embankment construction including disposal areas will be permitted.

- H. Remove all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess materials, or any other vestiges of construction as directed by the CO/COTR.

### 3.04 PROTECTION OF AIR QUALITY

- A. Burning - The use of burning at the project site for the disposal of refuse and debris will not be permitted by the Contractor.
- B. Dust Control - The Contractor will be required to maintain all excavations, embankment, stockpiles, access roads, plant sites, waste areas, borrow areas, and all other work areas within or without the project boundaries free from dust which could cause the standards for air pollution to be exceeded and which would cause a hazard or nuisance to others.
- C. An approved method of stabilization consisting of sprinkling or other similar methods will be permitted to control dust. The use of petroleum products is prohibited. The use of chlorides may be permitted with approval from the CO/COTR.
- D. Sprinkling, to be approved, must be repeated at such intervals as to keep all parts of the disturbed area at least damp at all times, and the Contractor must have sufficient competent equipment on the job to accomplish this if sprinkling is used. Dust control shall be performed as the work proceeds and whenever a dust nuisance or hazard occurs, as determined by the CO/COTR.
- E. Releases of asbestos containing materials shall not be permitted during landfill operations, including transportation, placement, adjustment, and compaction of asbestos waste loads. A water truck with a capacity of at least 1000 gallons shall be on site at all times during waste disposal. Waste shall be continuously wetted during disposal of waste loads. A 6-inch layer of daily cover soil shall be placed on the waste material at a minimum frequency of once per day. Additional applications of daily cover shall be applied if necessary to control wind-blown debris. On windy days, if dust control procedures are not effective at controlling dust and other wind-blown debris, landfill disposal operations shall cease until the wind levels decrease.

### 3.05 MAINTENANCE OF POLLUTION CONTROL FACILITIES DURING CONSTRUCTION

- A. During the life of this Contract, maintain all facilities constructed for pollution control as long as the operations creating the particular pollutant are being carried out or until the material concerned has become stabilized to the extent that pollution is no longer being created.

### 3.06 NOISE CONTROL

- A. The Contractor shall make every effort to minimize noises caused by his/her operations. Equipment shall be equipped with silencers or mufflers designed to operate with the least possible noise in compliance with state and federal regulations.

**END OF SECTION**

## SECTION 01153

### CHANGE ORDER PROCEDURES

#### PART 1 GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. Promptly implement change order procedures.
  - 1. Provide full written data required to evaluate changes.
  - 2. Maintain detailed records of work done on a time-and-material/ force account basis.
  - 3. Provide full documentation to CO/COTR on request.
- B. Designate in writing the member of Contractor's organization:
  - 1. Who is authorized to accept changes in the Work.
  - 2. Who is responsible for informing others in the Contractor's employ of the authorization of changes in the Work.
- C. Government will designate in writing the person who is authorized to execute Change Orders.

##### 1.02 RELATED REQUIREMENTS

- A. Agreement, the amounts of established unit prices, is included in Division 0.
- B. General conditions, the conditions of the contract, are included in Division 0.
  - 1. Methods of determining cost or credit to Government resulting from changes in Work made on a time and material basis.
  - 2. Contractor's claims for additional costs.
- C. Construction Scheduling is included in Section 01311.
- D. Contract Closeout is included in Section 01700.

##### 1.03 DEFINITIONS

- A. Change Order: See Conditions of the Contract.
- B. Construction Change Authorization: A written order to the Contractor, signed by Government and CO/COTR, which amends the Contract Documents as described and authorized Contractor to proceed with a change which affects the Contract Sum or the Contract Time, for inclusion in a subsequent Change Order.
- C. Architect's Supplemental Instructions, AIA Document G710: A written order,

instructions, or interpretations, signed by CO/COTR making minor changes in the Work not involving a change in Contract Sum or Contract Time.

- D. Field Order: A written order to the Contractor, signed by the CO/COTR and the Contractor, which is issued to interpret/clarify the Contract Documents, order minor changes in the work and/or document trade-off agreements. The work described by a Field Order is to be accomplished without change to the Contract Sum, Contract Time, and/or claims for other costs.

#### 1.04 PRELIMINARY PROCEDURES

- A. Government or CO/COTR may initiate changes by submitting a Request for Proposal (RFP) to Contractor. Request will include:
1. Detailed description of the change, products, and location of the change in the Project.
  2. Supplementary or revised Drawings and Specifications.
  3. The projected time span for making the change and a specific statement as to whether overtime work is, or is not, authorized.
  4. A specific period of time during which the requested price will be considered valid.
  5. Such request is for information only and is not an instruction to execute the changes, nor to stop work in progress.
- B. Contractor may initiate changes by submitting a written notice to CO/COTR, containing:
1. Description of the proposed changes.
  2. Statement of the reason for making the changes.
  3. Statement of the effect on the Contract Sum and the Contract Time.
  4. Statement of the effect on the work of separate contractors.
  5. Documentation supporting any change in Contract Sum or Contract Time, as appropriate.

#### 1.05 WORK DIRECTIVE CHANGE AUTHORIZATION

- A. In lieu of a RFP, CO/COTR may issue a work directive authorization for Contractor to proceed with a change for subsequent inclusion in a Change Order.
- B. Authorization will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change and will designate the method of determining any change in the Contract Sum and any change in Contract Time.
- C. Government and CO/COTR will sign and date the Work Directive Change Authorization as authorization for the Contractor to proceed with the changes.

- D. Contractor may sign and date the Construction Change Authorization to indicate agreement with the terms therein.

#### 1.06 DOCUMENTATION OF PROPOSALS AND CLAIMS

- A. Support each quotation for a lump-sum proposal and for each unit price which has not previously been established, with sufficient substantiating data to allow CO/COTR to evaluate the quotation.
- B. On request, provide additional data to support time and cost computations
  - 1. Labor required.
  - 2. Equipment required.
  - 3. Products required.
    - a. Recommended source of purchase and unit cost.
    - b. Quantities required.
  - 4. Taxes, insurance, and bonds.
  - 5. Credit for work deleted from Contract, similarly documented.
  - 6. Overhead and profit.
  - 7. Justification for any change in Contract Time.
- C. Support each claim for additional costs and for work done on a time-and-material/force account basis, with documentation as required for a lump-sum proposal, plus additional information.
  - 1. Name of the Government's authorized agent who ordered the work and date of the order.
  - 2. Dates and times work was performed and by whom.
  - 3. Time record, summary of hours worked, and hourly rates paid.
  - 4. Receipts and invoices for:
    - a. Equipment used, listing dates and times of use.
    - b. Products used, listing of quantities.
    - c. Subcontracts.

#### 1.07 PREPARATION OF CHANGE ORDERS AND FIELD ORDERS

- A. CO/COTR will prepare each Change Order and Field Order.



- B. Forms attached to the end of this Section.
- C. Change Order will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.
- D. Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.
- E. Field Order will describe interpretations or clarifications of Contract Documents, order minor changes in the Work, and/or memorialize trade-off agreements.
- F. Field Order work will be accomplished without change in the Contract Sum, Contract Time, and/ or claims for other costs.

#### 1.08 LUMP-SUM/FIXED PRICE CHANGE ORDER

- A. Content of Change Orders will be based on, either:
  - 1. CO/COTR's Proposal Request and Contractor's responsive Proposal as mutually agreed between Government and Contractor.
  - 2. Contractor's Proposal for a change, as recommended by CO/COTR.
- B. Government and CO/COTR will sign and date the Change Order as authorization for the Contractor to proceed with the changes.
- C. Contractor will sign and date the Change Order to indicate agreement with the terms therein.

#### 1.09 UNIT PRICE CHANGE ORDER

- A. Content of Change Orders will be based on, either:
  - 1. CO/COTR's definition of the scope of the required changes.
  - 2. Contractor's Proposal for a change, as recommended by CO/COTR.
  - 3. Survey of completed work.
- B. The amounts of the unit prices to be:
  - 1. Those stated in the Agreement.
  - 2. Those mutually agreed upon between Government and Contractor.
- C. When quantities of each of the items affected by the Change Order can be determined prior to start of the work:
  - 1. Government and CO/COTR will sign and date the Change Order as authorization for Contractor to proceed with the changes.
  - 2. Contractor will sign and date the Change Order to indicate agreement with the terms therein.

D. When quantities of the items cannot be determined prior to start of the work:

1. CO/COTR or Government will issue a construction change authorization directing Contractor to proceed with the change on the basis of unit prices, and will cite the applicable unit prices.
2. At completion of the change, CO/COTR will determine the cost of such work based on the unit prices and quantities used.
  - a. Contractor shall submit documentation to establish the number of units of each item and any claims for a change in Contract Time.
3. CO/COTR will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.
4. Government and Contractor will sign and date the Change Order to indicate their agreement with the terms therein.

1.10 TIME AND MATERIAL/FORCE ACCOUNT CHANGE ORDER/WORK DIRECTIVE  
CHANGE AUTHORIZATION

- A. CO/COTR and Government will issue a Work Directive Change Authorization directing Contractor to proceed with the changes.
- B. At completion of the change, Contractor shall submit itemized accounting and supporting data as provided in the Article "Documentation of Proposals and Claims" of this Section.
- C. CO/COTR will determine the allowable cost of such work, as provided in General Conditions and Supplementary Conditions.
- D. CO/COTR will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.
- E. Government and Contractor will sign and date the Change Order to indicate their agreement therewith.

1.11 CORRELATION WITH CONTRACTOR'S SUBMITTALS

- A. Periodically revise Schedule of Values and Request for Payment forms to record each change as a separate item of Work, and to record the adjusted Contract Sum.
- B. Periodically revise the Construction Schedule to reflect each change in Contract Time.
  1. Revise subschedules to show changes for other items of work affected by the changes.
- C. Upon completion of work under a Change Order, enter pertinent changes in Record Documents.

(The attached Change Order and Field Order forms are also part of this Section)

**END OF SECTION**

## CHANGE ORDER

Project \_\_\_\_\_

Contract Title \_\_\_\_\_

Contract Number \_\_\_\_\_

Change Order Number \_\_\_\_\_

Original Contract Price \$ \_\_\_\_\_

Net Increase/Decrease in Contract Price \$ \_\_\_\_\_  
(this change order)

Total Adjusted Contract Price \$ \_\_\_\_\_  
(including this change order)

This change order increases/decreases the time to complete the work by \_\_\_\_\_ calendar days.

The extended completion date is \_\_\_\_\_.

This change order checked by \_\_\_\_\_  
(Chief) Resident Engineer (CO/COTR) Date

This change order is requested by \_\_\_\_\_  
Date

This change order is recommended by \_\_\_\_\_  
CO/COTR P.E. # Date

The undersigned agree to the terms of the change order

\_\_\_\_\_  
Contractor Date

\_\_\_\_\_  
Government Date

Approval as to appropriation

\_\_\_\_\_  
Certification Officer Date

Government's Name \_\_\_\_\_

Government's Address \_\_\_\_\_

Contractor's Name \_\_\_\_\_

Contractor's Address \_\_\_\_\_

Description of Change

\_\_\_\_\_  
\_\_\_\_\_

Reason for Change

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## FIELD ORDER

PROJECT \_\_\_\_\_

FIELD ORDER NO. \_\_\_\_\_

CONTRACT TITLE \_\_\_\_\_

DATE \_\_\_\_\_

CONTRACT NUMBER \_\_\_\_\_

CONTRACT DATE \_\_\_\_\_

GOVERNMENT \_\_\_\_\_

TO \_\_\_\_\_

This Field Order is issued to interpret/clarity the Contract Documents, order minor changes in the work and/or memorialize trade-off agreements. Both parties hereby agree that the work described by this Field Order is to be accomplished without change in Contract Sum, Contract Time, and/or claims for other costs.

DESCRIPTION (Insert a written description of the interpretation, change, or agreement below)

[illegible]

CONTRACTOR \_\_\_\_\_

BY \_\_\_\_\_

FIELD ENGINEER (CO/COTR) \_\_\_\_\_

BY \_\_\_\_\_

## SECTION 01300

### SUBMITTALS

#### PART 1 GENERAL

##### 1.01 DESCRIPTION OF REQUIREMENTS

- A. This Section specifies the general methods and requirements of submissions applicable to Shop Drawings, Product Data, Samples, and Construction Schedules. Detailed submittal requirements are specified in the technical Sections.
- B. All submittals shall be clearly identified by reference to Section Number, Paragraph, Drawing Number or Detail as applicable. Submittals shall be clear and legible and of sufficient size for presentation of data.

##### 1.02 SHOP DRAWINGS, PRODUCT DATA, SAMPLES

###### A. Shop Drawings

- 1. Shop drawings as specified in individual Sections include, custom-prepared data such as fabrication and erection/installation (working) drawings, scheduled information, setting diagrams, actual shopwork manufacturing instructions, custom templates, special wiring diagrams, coordination drawings, individual system or equipment inspection and test reports including performance curves and certifications, as applicable to the work.
- 2. All shop drawings submitted by subcontractors shall be sent directly to the Contractor for checking. The Contractor shall be responsible for their submission at the proper time so as to prevent delays in delivery of materials.
- 3. Check all subcontractor's shop drawings regarding measurements, size of members, materials and details to make sure that they conform to the intent of the Drawings and related Sections. Return shop drawings found to be inaccurate or otherwise in error to the subcontractors for correction before submission thereof.
- 4. All details on shop drawings shall show clearly the relation of the various parts to the main members and lines of the structure and where correct fabrication of the work depends upon field measurements, such measurements shall be made and noted on the drawings before being submitted.

###### B. Product Data

- 1. Product data as specified in individual Sections include, standard prepared data for manufactured products (sometimes referred to as catalog data), such as the manufacturer's product specification and installation instructions, availability of colors and patterns, manufacturer's printed statements of compliances and applicability, roughing-in diagrams and templates, catalog cuts, product photographs, concrete mixes, sieve analyses, reinforcing bar placement details, Material Data Safety Sheets, standard wiring diagrams, printed performance curves and operational-range diagrams, production or quality control inspection and test reports and certifications, mill reports, product operating and maintenance

instructions and recommended spare-parts listing and printed product warranties, as applicable to the work.

C. Samples

1. Samples specified in individual Sections include, physical examples of the work such as sections of manufactured or fabricated work, small cuts or containers of materials, complete units of repetitively-used products, color/texture/pattern swatches and range sets, specimens for coordination of visual effect, graphic symbols and units of work.

1.03 CONTRACTOR'S RESPONSIBILITIES

- A. Review shop drawings, product data and samples, including those by subcontractors, prior to submission to determine and verify the following:
  1. Field measurements
  2. Field construction criteria
  3. Catalog numbers and similar data
  4. Conformance with related Sections
- B. Each shop drawing, sample and product data submitted by the Contractor shall have affixed to it the following Certification Statement including the Contractor's Company name and signed by the Contractor: "Certification Statement: by this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements." Shop drawings and product data sheets 11-in x 17-in and smaller shall be bound together in an orderly fashion and bear the above Certification Statement on the cover sheet. The cover sheet shall fully describe the packaged data and include a listing of all items within the package.
- C. Notify the CO/COTR in writing, at the time of submittal, of any deviations in the submittals from the requirements of the Contract Documents.
- D. The review and approval of shop drawings, samples or product data by the CO/COTR shall not relieve the Contractor from the responsibility for the fulfillment of the terms of the Contract.
- E. No portion of the work requiring a shop drawing, sample, or product data shall be started nor shall any materials be fabricated or installed prior to the approval of such item. Fabrication performed, materials purchased or on-site construction accomplished which does not conform to approved shop drawings and data shall be at the Contractor's risk. The Government will not be liable for any expense or delay due to corrections or remedies required to accomplish conformity.
- F. Project work, materials, fabrication, and installation shall conform to approved shop drawings, applicable samples, and product data.

1.04 SUBMISSION REQUIREMENTS



- A. Make submittals promptly in accordance with approved schedule and in such sequence as to cause no delay in the Work or in the work of any other contractor.
- B. Each submittal, appropriately coded, will be returned within 15 business days following receipt of submittal by the CO/COTR.
- C. Number of submittals required:
  - 1. Shop Drawings: five copies.
  - 2. Product Data: Four copies.
  - 3. Samples: Submit the number stated in the respective Sections.
- D. Submittals shall contain:
  - 1. The date of submission and the dates of any previous submissions.
  - 2. The Project title and number.
  - 3. Contractor identification.
  - 4. The names of:
    - a. Contractor
    - b. Supplier
    - c. Manufacturer
  - 5. Identification of the product, with the section number, page and paragraph(s).
  - 6. Field dimensions, clearly identified as such.
  - 7. Relation to adjacent or critical features of the work or materials.
  - 8. Applicable standards, such as ASTM or Federal Standards numbers.
  - 9. Identification of deviations from Contract Documents.
  - 10. Identification of revisions on resubmittals.

1.05 REVIEW OF SHOP DRAWINGS, PRODUCT DATA, WORKING DRAWINGS AND SAMPLES

- A. The review of shop drawings, data and samples will be for general conformance with the design concept and Contract Documents. They shall not be construed as:
  - 1. permitting any departure from the Contract requirements;
  - 2. relieving the Contractor of responsibility for any errors, including details, dimensions, and materials;

3. approving departures from details furnished by the COTR, except as otherwise provided herein.
- B. The Contractor remains responsible for details and accuracy, for coordinating the work with all other associated work and trades, for selecting fabrication processes, for techniques of assembly, and for performing work in a safe manner.
- C. Submittals will be returned to the Contractor under one of the following codes.
  - Code 1 - "APPROVED" is assigned when there are no notations or comments on the submittal. When returned under this code the Contractor may release the equipment and/or material for manufacture.
  - Code 2 - "APPROVED AS NOTED". This code is assigned when a confirmation of the notations and comments IS NOT required by the Contractor. The Contractor may release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product.
  - Code 3 - "NOT APPROVED" is assigned when the submittal does not meet the intent of the Contract Documents. The Contractor must resubmit the entire package revised to bring the submittal into conformance. It may be necessary to resubmit using a different manufacturer/vendor to meet the Contract Documents.
  - Codes 1-3 designate the status of the reviewed submittal with Code 6 showing there has been an attachment of additional data.
- D. Resubmittals will be handled in the same manner as first submittals. On resubmittals the Contractor shall identify all revisions made to the submittals, either in writing on the letter of transmittal or on the shop drawings by use of revision triangles or other similar methods. The resubmittal shall clearly respond to each comment made by the CO/COTR on the previous submission. Additionally, the Contractor shall direct specific attention to any revisions made other than the corrections requested by the CO/COTR on previous submissions.
- E. Partial submittals may not be reviewed. The CO will be the only judge as to the completeness of a submittal. Submittals not complete will be returned to the Contractor and will be considered "Not Approved" until resubmitted. The CO/COTR may at his option provide a list or mark the submittal directing the Contractor to the areas that are incomplete.
- F. When the shop drawings have been completed to the satisfaction of the CO/COTR, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the CO/COTR.

#### 1.06 DISTRIBUTION

- A. Distribute reproductions of approved shop drawings and copies of approved product data and samples, where required, to the job site file and elsewhere as directed by the CO/COTR. Number of copies shall be as directed by the CO/COTR but shall not exceed five.

#### 1.07 GENERAL PROCEDURES FOR SUBMITTALS

- A. Coordination of Submittal Times: Prepare and transmit each submittal sufficiently in advance of performing the related work or other applicable activities, or within the time specified in the individual work of other related Sections, so that the installation will not be delayed by processing times including disapproval and resubmittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery and similar sequenced activities. No extension of time will be authorized because of the Contractor's failure to transmit submittals sufficiently in advance of the Work.

**END OF SECTION**

## SECTION 01311

### CONSTRUCTION SCHEDULING

#### PART 1 GENERAL

##### 1.01 PROGRAM DESCRIPTION

- A. A construction schedule shall be used to control the work of this Contract and to provide a definitive basis for determining job progress. Preparation and updating of the construction schedule shall be the responsibility of the Contractor. All work shall be done in accordance with the established schedule and the Contractor and his/her subcontractors shall be responsible for cooperating fully with the CO/COTR and the Government in effectively utilizing the schedule.
- B. The schedule to be prepared and submitted by the Contractor shall meet the requirements specified herein.

##### 1.02 SCHEDULE REQUIREMENTS

- A. The schedule shall show the order and interdependence of activities and the sequence in which the work is to be accomplished as planned by the Contractor. The schedule shall show how the start of a given activity is dependent on the completion of preceding activities and its completion restricts the start of following activities.
- B. Schedule activities shall include: construction activities, the submittal and approval of samples of materials and shop drawings, the procurement of materials and equipment, fabrication of materials and equipment, and their delivery, installation and testing, start-up, and training. Specific construction activities which shall be included are: topsoil stripping, construction of landfill cells B through M, operation of the landfill, constructing the landfill cover, and general site operation, maintenance, and security.
- C. The schedule shall include the following tabulations: a list of activities in numerical order, a list of activity precedences, a schedule sequenced by Early Start Date and a schedule sequenced by Total Float. Each schedule shall include the following minimum items:
  - 1. Activity numbers
  - 2. Estimated duration
  - 3. Activity description
  - 4. Early start date (calendar dated)
  - 5. Early finish date (calendar dated)
  - 6. Latest allowable start date (calendar dated)
  - 7. Latest allowable finish date (calendar dated)
  - 8. Status (whether critical)

9. Estimated cost of the activity

10. Total float and free float

D. In addition, each schedule shall be prefaced with the following summary data:

1. Contract name and number

2. Contractor's Name

3. Contract duration

4. Contract schedule

5. The effective or starting date of the schedule (the date indicated in the Notice to Proceed).

E. The work day shall be correlated to calendar day with adequate allowance for holidays, adverse weather and all other special requirements (such as length of work day) of the work.

F. Except where earlier completions are specified, schedules which show completion of all work prior to the contract completion date may be approved by the CO/COTR but in no event shall they be acceptable as a basis for claim for delay against the Government by the Contractor.

#### 1.03 INITIAL CONFERENCE

A. Within 15 days following the receipt of the Notice to Proceed, meet with the CO/COTR to discuss and agree on the proposed standards for the schedule. At this conference submit to the CO/COTR a general approach for the planned operations.

#### 1.04 APPROVED SCHEDULE

A. Within 21 days following the receipt of the Notice to Proceed, submit the proposed schedule to the CO/COTR. Following review by the CO/COTR, the Contractor shall incorporate the CO/COTR's comments and submit a revised copy of the schedule. This final submittal shall be delivered to the CO/COTR within 15 days after receipt of CO/COTR's comments.

B. Approval of the schedule by the CO/COTR is advisory only and shall not relieve the Contractor of responsibility for accomplishing the work within the contract completion date. Omissions and errors in the approved schedule shall not excuse performance less than that required by the Contract. Approval by the CO/COTR in no way makes the CO/COTR an insurer of the schedule's success or liable for time or cost overruns flowing from its shortcomings. The Government hereby disclaims any obligation or liability by reason of approval by its agent, the CO/COTR, of the schedule.

#### 1.05 PROGRESS REPORTING

A. Progress under the approved schedule shall be evaluated monthly by the Contractor and the CO/COTR. At each monthly progress meeting, they shall meet at the jobsite and

jointly evaluate the status of each activity on which work has started or is due to start, based on the preceding schedule; to show actual progress, to identify those activities started and those completed during the previous period, to show the estimated time required to complete or the percent complete of each activity started but not yet completed and to reflect any changes indicated for the network. Activities shall not be considered to be complete until they are, in fact, 100 percent complete.

- B. The Contractor shall produce from this evaluation an updated schedule and Status Report for the project.
- C. The Status Report shall include a description of the progress during the previous period in terms of completed activities, an explanation of each activity which is showing a delay, a description of problem areas, current and anticipated delaying factors and their estimated impact on performance of other activities and completion dates, and an explanation of corrective action taken or proposed. This report, as well as the will be discussed at each progress meeting.

#### 1.06 RESPONSIBILITY FOR SCHEDULE COMPLIANCE

- A. Whenever it becomes apparent from the current schedule and Status Report that delays to the critical path have resulted and the contract completion date will not be met, or when so directed by the CO/COTR, take some or all of the following actions at no additional cost to the Government. Submit to the CO/COTR for approval, a written statement of the steps intended to take to remove or arrest the delay to the critical path in the approved schedule.
  - 1. Increase construction manpower in such quantities and crafts as will substantially eliminate the backlog of work.
  - 2. Increase the number of working hours per shift, shifts per day, working days per week, the amount of construction equipment, or any combination of the foregoing, sufficiently to substantially eliminate the backlog of work.
  - 3. Reschedule activities to achieve maximum practical concurrence of accomplishment of activities and comply with the revised schedule.
- B. If when so requested by the CO/COTR, failure to submit a written statement of the steps intended to take or should fail to take such steps as approved by the CO/COTR, the CO/COTR may direct the Contractor to increase the level of effort in manpower (trades), equipment and work schedule (overtime, weekend and holiday work, etc.) to be employed by the Contractor in order to remove or arrest the delay to the critical path in the approved schedule and the Contractor shall promptly provide such level of effort at no additional cost to the Government.

#### 1.07 ADJUSTMENT OF CONTRACT SCHEDULE AND COMPLETION TIME

- A. If the Contractor desires to make changes in his/her method of operating which affect the approved schedule, he/she shall notify the CO/COTR in writing stating what changes are proposed and the reason for the change. If the CO/COTR approves these changes, the Contractor shall revise the schedule and submit it for approval, without additional cost to the Government. The schedule shall be adjusted by the Contractor only after prior approval of his/her proposed changes by the CO/COTR. Adjustments may consist of changing portions of the activity sequence, activity durations, division of approved activities, or other adjustments as may be approved by the CO/COTR. The addition of

extraneous, non-working activities and activities which add unapproved restraints to the schedule shall not be approved.

- B. If the completion of any activity, whether or not critical, falls more than 100 percent behind its approved duration, submit for approval a schedule adjustment showing each such activity divided into two activities reflecting completed versus uncompleted work.
- C. Shop drawings which are not approved on the first submittal or within the schedule time and equipment which do not pass the specified tests shall be immediately rescheduled.
- D. The contract completion time will be adjusted only for causes specified in this Contract. In the event the Contractor requests an extension of any contract completion date, he/she shall furnish such justification and supporting evidence as the CO/COTR may deem necessary to determine whether the Contractor is entitled to an extension of time under the provisions of this Contract. The CO/COTR will, after receipt of such justification and supporting evidence, make findings of fact and will advise the Contractor in writing thereof. If the CO/COTR finds that the Contractor is entitled to any extension of any contract completion date, the CO/COTR's determination as to the total number of days extension shall be based upon the currently approved schedule and on all data relevant to the extension. Such data shall be included in the next updating of the schedule. Actual delays in activities which, according to the schedule, do not affect any contract completion date shown by the critical path in the network will not be the basis for a change therein.
- E. Each request for change in any contract completion date shall be submitted by the Contractor to the CO/COTR within 30 days after the beginning of the delay for which a time extension is requested but before the date of final payment under this Contract. No time extension will be granted for requests which are not submitted within the foregoing time limit.
  - 1. From time to time it may be necessary for the contract schedule or completion time to be adjusted by the Government to reflect the effects of job conditions, weather, technical difficulties, strikes, unavoidable delays on the part of the Government or its representatives and other unforeseeable conditions which may indicate schedule adjustments or completion time extensions. Under such conditions, the CO/COTR will direct the Contractor to reschedule the work or contract completion time to reflect the changed conditions and the Contractor shall revise his/her schedule accordingly. No additional compensation will be made to the Contractor for such schedule changes except for unavoidable overall contract time extensions beyond the actual completion of all unaffected work, in which case the Contractor shall take all possible action to minimize any time extension and any additional cost to the Government. Available float time in the schedule may be used by the Government as defined by the CO/COTR, as well as by the Contractor.

#### 1.08 COORDINATING SCHEDULES WITH OTHER CONTRACT SCHEDULES

- A. Where work is to be performed under this Contract concurrently with or contingent upon work performed on the same facilities or area under other contracts, the Contractor's Schedule shall be coordinated with the schedules of the other contracts. Obtain the schedules of the other appropriate contracts from the Government for the preparation and updating of the schedule and make the required changes in the schedule when indicated by changes in corresponding schedules.

- B. In case of interference between the operations of different contractors, the Government will determine the work priority of each contractor and the sequence of work necessary to expedite the completion of the entire project. In all such cases, the decision of the Government shall be accepted as final. The temporary delay of the Contractor's work due to such circumstances shall not be considered as justification for claims for additional compensation.

**END OF SECTION**



## SECTION 01400

### CONTRACTOR QUALITY CONTROL

#### PART 1 GENERAL

##### 1.01 QUALITY CONTROL PLAN

- A. General: Furnish for approval by the Government, the Contractor Quality Control (CQC) Plan at the Pre-Construction meeting. The plan shall identify personnel, procedures, instructions, records, and forms to be used. Failure to submit an acceptable QC plan within the time herein prescribed may result in the Government refusing to allow construction to start until such time as an acceptable final plan is submitted.
- B. The Contractor Quality Control Plan: This plan shall include as a minimum, the following:
  - 1. A description of the quality control organization, including chart showing lines of authority and acknowledgment that the Contractor's QC staff shall report to the Project Manager or someone higher in the Contractor's organization.
  - 2. The name, qualifications, duties, responsibilities, and authorities of each person assigned a QC function.
  - 3. A copy of a statement signed by an authorized official of the Contractor's firm, which describes the responsibilities and delegates the authorities of the CQC System Manager.
- C. Acceptance of Plan: Acceptance of the plan by the Government is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction.
- D. Notification of Changes: After acceptance of the CQC plan, notify the Government in writing of any proposed change. Proposed changes are subject to acceptance by the Government.

##### 1.02 QUALITY CONTROL ORGANIZATION

- A. CQC System Manager: CQC System Manager shall be responsible for overall management of the CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager for this contract shall be an approved, qualified hazardous material removal Engineer or comparable individual to ensure compliance with contract plans and specifications. This person shall demonstrate his/her ability to perform correctly the duties required of him/her to the satisfaction of the Government and shall be physically at the project site whenever work is in progress and will be in charge of the Contractor's Quality Control program for this project. All the Contractor's submittals for approval shall be reviewed and modified or corrected as needed by him/her or his/her authorized assistants and approved correct prior to forwarding of such submittals to the Government.
- B. Personnel: The personnel of the CQC staff shall be fully qualified by experience and technical training to perform their assigned responsibilities and shall be directly hired by and work for the Contractor.

### 1.03 SUBMITTALS

- A. Submittals shall be as specified in Section 01300. The CQC Organization shall be responsible for certifying that all submittals are in compliance with the contract requirements.

### PART 2 PRODUCTS (NOT USED)

### PART 3 EXECUTION

#### 3.01 CONTROL

- A. Contractor Quality Control is the means by which the Contractor assures himself that his/her construction complies with the requirements of the contract plans and specifications. The controls shall be adequate to cover all construction operations, including both onsite and offsite operations, and will be keyed to the proposed construction sequence. The controls shall include at least three phases of inspection for all definitive features of work as follows:
  - 1. Preparatory Inspection: This shall be performed prior to beginning any definable feature of work. It shall include a review of contract requirements; a check to assure that all materials and/or equipment have been tested, submitted and approved; a check to assure that provisions have been made to provide required control testing; examination of the work area to ascertain that all preliminary work has been completed and a physical examination of materials to assure that they conform to approved submittal data and that all materials and/or equipment are on hand.
  - 2. Initial Inspection: This shall be performed as soon as a representative portion of the particular feature of work has been accomplished and shall include examination of the quality of workmanship and a review of control testing for compliance with contract requirements, use of defective or damaged materials, omissions, and dimensional requirements.
  - 3. Follow-Up Inspection: These shall be performed daily to assure continuing compliance with contract requirements, including control testing, until completion of the particular feature of work. Such inspection shall be made a matter of record in the CQC documentation as required below. Final follow-up inspections shall be conducted and deficiencies corrected prior to the addition of new features of work.

#### 3.02 COMPLETION INSPECTION

- A. At the completion of all work or any increment thereof established by a completion time stated in the specifications, the CQC System Manager shall conduct a completion inspection of the work and develop a "punch list" of items which do not conform to the approved plans and specifications. Such a list shall be included in the CQC documentation, as required below, and shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or his/her staff shall make a second completion inspection to ascertain that all deficiencies have been corrected and so notify the Government. The completion inspection and any deficiency corrections required by this paragraph will be accomplished within the time stated for completion of

the entire work or any particular increment thereof if the project is divided into increments by separate completion dates.

### 3.03 DOCUMENTATION

- A. Maintain current records of quality control operations, activities, and tests performed including the work of suppliers and subcontractors. These records shall be on an acceptable form (sample form attached) and indicate a description of trades working on the project, the numbers of personnel working, the weather conditions encountered, any delays encountered, and acknowledgment of deficiencies noted along with the corrective actions taken on current and previous deficiencies. In addition, these records shall include factual evidence that required activities or tests have been performed, including but not limited to the following:
  - 1. Type and number of control activities and tests involved.
  - 2. Results of control activities or tests.
  - 3. Nature of defects, causes for rejection, etc.
  - 4. Proposed remedial action.
  - 5. Corrective actions taken.
- B. These records shall cover both conforming and defective or deficient features and shall include a statement that supplies and materials incorporated in the work comply with the requirements of the contract. Legible copies of these records shall be furnished to the Government daily.

### 3.04 NOTIFICATION OF NONCOMPLIANCE

- A. The Government or CO/COTR will notify the Contractor of any noncompliance with the foregoing requirements. After receipt of such notice, immediately take corrective action. Such notice, when delivered to the Contractor or his/her representative at the site of the work, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Government may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

(The attached QC Daily Report is part of this Section)

**END OF SECTION**

## QUALITY CONTROL DAILY REPORT

(CONTRACTOR)

REPORT NO. \_\_\_\_\_ CONTRACT NO. \_\_\_\_\_ DATE \_\_\_\_\_

LOCATION OF WORK: \_\_\_\_\_

DESCRIPTION: \_\_\_\_\_

WEATHER \_\_\_\_\_, RAINFALL \_\_\_\_\_ INCHES, TEMP: \_\_\_\_\_ MIN \_\_\_\_\_ MAX

1. Work performed today by Contractor (include Equipment and Labor breakdown):
2. Work performed today by Subcontractors (include Equipment and Labor breakdown):
3. List specific inspection performed and results of these inspections (include Corrective Actions):
4. Verbal Instructions received from Government or CO/COTR on construction deficiencies or re-testing required:
5. Remarks:
6. CERTIFICATION: I certify that the above report is complete and correct and that I, or my authorized representative, have inspected the work performed this day by the Contractor and each subcontractor and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may be noted above.

\_\_\_\_\_  
Contractor's Designated Quality Control

## SECTION 01500

### TEMPORARY FACILITIES

#### PART 1 GENERAL

##### 1.01 CONTRACTOR'S FIELD OFFICE

- A. Temporary offices shall be established on the job site in the location shown on the Drawings, adequately furnished and maintained in a clean, orderly condition by the Contractor. The Contractor or his authorized representative shall be present in the field office at all times while work is in progress. Instructions received there from the CO/COTR or Government shall be considered as delivered to the Contractor.
- B. Field office shall be of adequate size to accommodate Contractor's staff and provide suitable space for project meetings. The office shall be provided with adequate lighting, heating, and air conditioning; telephone service; file cabinets and plan racks; conference table and chairs for project meetings; and temporary sanitary facilities for his staff. The field office may be constructed on site or may be a portable or mobile unit designed for the use.

##### 1.02 CO/COTR'S FIELD OFFICE

- A. Furnish, equip, maintain, and provide specified services for the CO/COTR's field office, including all necessary power, utilities, and insurances. The field office shall be maintained and serviced until the Certificate of Completion has been filed. The field office shall be complete and ready for occupancy by the CO/COTR within 21 days of Notice to Proceed. The complex shall conform to local building codes.
- B. Materials and Equipment
  - 1. The field office shall be 12-foot by 12-foot, minimum. Office shall be weathertight construction with floor, walls, and ceiling fully insulated.
  - 2. The office shall be provided with two exterior doors provided with Medeco lock systems, or equal, keyed alike. The CO/COTR shall be provided with two keys. At each entrance, a wooden stairway with railing and platform shall be provided. Office shall have at least two or more windows. All windows shall be thermopane glazed and be provided with screens and venetian blinds.
  - 3. Lavatory facilities shall be temporary and portable. No water or sewer service is available for the temporary facilities. The lavatory door shall be equipped with a lock.
  - 4. Office shall be separate from Contractor's office.
- C. Water and Sewer System
  - 1. Potable water supply and sanitary sewer connections will not be available for the temporary facilities.
  - 2. A hot and cold drinking water system shall be installed and a water delivery service maintained for the duration of the project.

3. Lavatory facilities shall be portable. A service contract shall be maintained for weekly cleaning throughout the project duration

D. Heating/Cooling System

1. The office shall be provided with central heating and air conditioning. The system shall be capable of maintaining an interior temperature of 70°F when the exterior temperature is -20°F and an interior temperature of 75°F when the exterior temperature is 100°F. The system shall be thermostatically controlled with a thermostat located on an interior partition, the exact location of which to be approved by the CO/COTR.

E. Electrical System

1. Installation shall include entrance connectors, grounding, enclosed fused service switches and branch circuit fuse boxes. Separate circuits shall be provided for lighting and other electrically operated items. Separate circuits shall be provided for the water heater, the photocopier, and two separate circuits for computers. Minimum circuit size shall be two conductor No. 12 AWG. Use heavier conductors where required. The entire electrical system and office shall be properly grounded.

F. Lighting and Outlets

1. Lighting shall be provided by fluorescent ceiling fixtures furnishing 20 foot-candles at desk height, uniform throughout. Each room shall be provided with a wall switch for ceiling fixtures. Each area shall be provided with duplex convenience outlets as required by local code.

G. Movable Equipment and Furniture

1. Field office furniture may be previously used if in excellent condition subject to CO/COTR's approval. Field office equipment shall be new. The field office shall be furnished with the following new equipment and furniture:
  - 1 - 60-inch by 30-inch desk with file drawer and five drawers, all lockable, and upholstered swivel type chair with arms
  - 1 - 60-inch by 36-inch drafting table with drawer and stool
  - 5 - Armless side chairs (stacking type)
  - 1 - 54-inch by 30-inch reference table
  - 1 - File cabinet, four drawer, legal size, Hon No. HN-315C, or equal
  - 1 - Wastebaskets
  - 1 - Storage cabinet, lockable, 72-inches high by 36-inches wide by 18-inches deep
  - 2 - Fire extinguishers, type B:C

- 1 - Steel bookcase units, four shelves high, Hon No. HN-S48 ABC, or equal
- 1 - Telephone answering machine, beeperless remote
- 1 - Coat stand
- 1 - Electric bottled water dispenser with hot and cold outlets and adequate water bottles
- 1 - First aid kit
- 2 - Smoke detectors with batteries
- 1 - Sharp Electrostatic Copy Machine Model No. SF-8100 with SF-432 and 465 attachments, or equal, with service contract for term of the contract
- 1 - Facsimile machine, fully automatic, G2 & 3 compatible, 38 number speed dial, 10 sheet document feeder, automatic paper cutter, Toshiba, FAX 4600, or equal, with service contract for term of the contract
- 2 - Pair of walkie talkies and chargers, Motorola, or equal

H. Telephone System and Equipment - Touch-Tone

- 1. The office shall be supplied with telephone service as follows:
  - a. Two voice grade lines.
  - b. Two additional separate lines: one for the facsimile machine and one for the computer modem.
- 2. Telephone instruments shall have the following features:
  - a. Automatic dialing of a minimum of 16 phone numbers, up to 30 digits each.
  - b. Speakerphone with volume control.
  - c. Hold.
  - d. Three way conference calls.
  - e. Three line operation capability.
  - f. Internal intercom.
- 3. One instrument shall be provided.
- 4. Pay all costs for installation, maintenance, and removal of the telephone service and instruments. The monthly cost of all calls made by the CO/COTR, except toll and long distance calls, shall be paid for by the Contractor.

I. Maintenance and Service

1. Provide maintenance and service, until the Certificate of Completion has been filed, as follows:
  - a. Repair, cleaning, and maintenance of the field office complex to include lavatory facilities, drinking water, light, heat, and janitorial services.
2. Janitorial services shall include the following:
  - a. Weekly cleaning of the lavatory facilities.
  - b. Weekly washing of the tile floors.
  - c. Weekly dusting.
  - d. Semiannual window cleaning.
  - e. Maintaining adequate supply of soap, toilet tissue, paper towels, and plastic garbage bags.
  - f. Exterminate the premises as necessary to control insect and rodent infestations.
  - g. Remove snow and salt stairways when needed.
  - h. Facsimile machine maintenance, service and supplies, including paper, for 300 pages per month.
  - i. Electric bottled water dispenser, including an adequate supply of bottled water.
  - j. Photocopier maintenance, service and supplies, including paper, toner, and other required supplies, for 300 copies per month.
  - k. Computer and peripheral equipment carry-in maintenance, including parts and labor.
  - l. If waste holding tanks are furnished, provide for pumping of waste content on a routine basis.

J. Insurance

1. The Contractor or the Contractor's leasing company shall provide fire insurance, extended coverage and vandalism, malicious mischief and burglary, and theft insurance coverage for the office and contents in the amount of \$100,000. Provide proof of coverage.

1.03 TEMPORARY LIGHT AND POWER

- A. Furnish temporary light and power, including 220 volt service for welding, complete with wiring, lamps, and similar equipment as required to adequately light all work areas and



with sufficient power capacity to meet the reasonable needs of all subcontractors. Make all necessary arrangements with the local electric company for temporary electric service and pay all expenses in connection therewith.

- B. Install circuit and branch wiring, with area distribution boxes located so that power and lighting is available throughout the construction by the use of construction-type power cords.

#### 1.04 TEMPORARY HEATING, COOLING, AND VENTILATING

- A. Provide temporary heating, cooling, and ventilating as required to maintain adequate environmental conditions to facilitate progress of the Work, to meet specified minimum conditions for the installation of materials and to protect materials and finishes from damage due to temperature or humidity.
- B. Provide adequate forced ventilation of enclosed areas for curing of installed materials, to disperse humidity and to prevent hazardous accumulations of dust, fumes, vapors, or gases.
- C. Portable heaters shall be standard approved units complete with controls.

#### 1.05 REMOVAL

- A. Completely remove all temporary materials and equipment when their use is no longer required.
- B. Clean and repair damage caused by temporary installations or use of temporary facilities.
- C. Remove field offices, contents, and services from the site. The CO/COTR's field offices shall become the property of the Contractor. Remove foundations and debris and grade area to required elevations.

**END OF SECTION**

## **SECTION 01562**

### **DUST CONTROL**

#### **PART 1 GENERAL**

##### **1.01 SCOPE OF WORK**

- A. Perform dust control operations, in an approved manner, whenever necessary or when directed by the CO/COTR, even though other work on the project may be suspended. Dust control shall be accomplished by the use of water.
- B. Methods of controlling dust shall meet all air pollutant standards as set forth by Federal and State regulatory agencies.
- C. The Contractor shall provide all equipment and materials for performing the dust control work specified herein.

##### **1.02 RELATED WORK**

- A. Section 01300 Submittals

##### **1.03 SUBMITTALS**

- A. The Contractor shall submit to the CO/COTR, as provided in Section 01300 information as noted below.
  - 1. The source of the water to be used for dust control.
  - 2. Documentation that the water used for dust control is free of contaminants, and that the water quality meets all EPA and state regulations.

#### **PART 2 PRODUCTS**

##### **2.01 WATER**

- A. Water for dust control shall be obtained from an off site source. No water will be available on site for dust control.
- B. Water shall be clear, free of contaminants, and meet all EPA and state regulations.

#### **PART 3 EXECUTION**

##### **3.01 WATER APPLICATION**

- A. Water shall be applied to roads or other site areas requiring dust control via water truck at a rate and frequency which controls all visible dust.
- B. Water shall be applied to waste material via water truck as it is disposed in the landfill cell

**PART 4 MEASUREMENT AND PAYMENT**

- A. No separate measurement and payment will be made for dust control. The work specified in this Section related to dust control will be considered incidental to work specified in other sections.

**END OF SECTION**

## SECTION 01580

### PROJECT IDENTIFICATION AND SIGNS

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Repaint and maintain project identification sign which shall be located at the main project entrance
- B. Maintain asbestos waste disposal signs at 300 foot intervals along the perimeter fence and at the gate to the asbestos landfill.
- C. Maintain and all other signs designated in this section and shown on the Drawings.

##### 1.02 RELATED REQUIREMENTS

- A. Section 01300 Submittals

##### 1.03 REFERENCES

- A. Manual on Uniform Traffic Control Devices millennium edition, December 2000 (MUTCD 2000).
- B. 40 Code of Federal Regulations (CFR) 61.154.

##### 1.04 SUBMITTALS

- A. Prepare and submit a graphic representation of the project identification sign to the CO/COTR within 15 days of Notice to Proceed.

##### 1.05 PROJECT IDENTIFICATION SIGN

- A. Repaint sign, [32 square feet (3 square meters) area], with painted graphic content to include:
  - 1. Title of Project: Lincoln County Class IV Landfill
  - 2. Logo and Name of Government: U.S. Environmental Protection Agency
  - 3. Logo and Name of Contracting Officer: Volpe National Transportation Systems Center
  - 4. Name of Contracting Officer's Technical Representative:
  - 5. Prime Contractor
  - 6. Point of Contact Phone Numbers
- B. Graphic design, style of lettering, and colors: As approved by the Government and applicable local regulations for signs.

- C. Erect on the site at a lighted location of high public visibility, adjacent to main entrance to site, as approved by the CO/COTR and the Government.

#### 1.06 ABESTOS NOTIFICATION AND OTHER SIGNS

- A. Maintain asbestos notification signs at the landfill gate and at 300-foot increments along the site perimeter fence.
- B. Maintain all informational signs in the locations shown in the Phase I Drawings.

#### 1.07 QUALITY ASSURANCE

- A. Sign Painter: Professional Experience in type of work required.
- B. Finishes and Painting: Adequate to resist weathering and fading for scheduled construction period.

### PART 2 PRODUCTS

#### 2.01 SIGN MATERIALS

- A. Structure and Framing: May be new or used, wood or metal, in sound condition structurally adequate to work and suitable for specified finish.
- B. Sign Surfaces: Exterior softwood plywood with medium density overlay, standard large sizes to minimize joints.
  - 1. Thickness: As required by standards to span framing members, to provide even, smooth surface without waves or buckles.
- C. Rough Hardware: Galvanized
- D. Paint: Exterior quality
  - 1. Use Bulletin colors for graphics.
  - 2. Colors for structure, framing, sign surfaces, and graphics: As selected by the CO/COTR.

### PART 3 EXECUTION

#### 3.01 PROJECT IDENTIFICATION SIGN

- A. Paint exposed surfaces of supports, framing, and surface material; one coat of primer and one coat of exterior paint.
- B. Paint graphics in styles, sizes, and colors selected.

#### 3.02 MAINTENANCE

- A. Maintain signs and supports in a neat, clean condition; repair damages to structure, framing, or sign.

### PART 4 MEASUREMENT AND PAYMENT

- A. No separate measurement and payment will be made to furnish, install and maintain the project identification, asbestos, and other signs. The work specified in this Section related to signs will be considered incidental to work specified in other sections.

**END OF SECTION**

## SECTION 01600

### DELIVERY, STORAGE, AND HANDLING

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. This Section specifies the general requirements for the delivery handling, storage, and protection for all items required in the construction of the work. Specific requirements, if any, are specified with the related item.

##### 1.02 TRANSPORTATION AND DELIVERY

- A. Transport and handle items in accordance with manufacturer's instructions.
- B. Deliver products to the site in manufacturer's original sealed containers or other packing systems, complete with instructions for handling, storing, unpacking, protecting, and installing.
- C. All items delivered to the site shall be unloaded and placed in a manner which will not hamper the Contractor's normal construction operation or those of subcontractors and other Contractors and will not interfere with the flow of necessary traffic.
- D. Provide necessary equipment and personnel to unload all items delivered to the site.
- E. Promptly inspect shipment to assure that products comply with requirements, quantities are correct, and items are undamaged.

##### 1.03 STORAGE AND PROTECTION

- A. Store and protect products in accordance with the manufacturer's instructions, with seals and labels intact and legible. Storage instruction shall be studied by the Contractor and reviewed with the CO/COTR by him/her. Instruction shall be carefully followed and a written record of this kept by the Contractor. Arrange storage to permit access for inspection.
- B. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- C. All structural, miscellaneous, and reinforcing steel shall be stored off the ground or otherwise to prevent accumulations of dirt or grease and in a position to prevent accumulations of standing water and to minimize rusting.

END OF SECTION

## SECTION 01700

### CONTRACT CLOSEOUT

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:
  - 1. Closeout procedures
  - 2. Final cleaning
  - 3. Adjusting
  - 4. Project record documents

##### 1.02 RELATED WORK

- A. Warranties are included in Section 01740.

##### 1.03 RECORD DOCUMENTS

- A. Maintain on site, one set of the following documents; actual revisions to the Work shall be recorded in these documents:
  - 1. Contract Drawings
  - 2. Specifications
  - 3. Addenda
  - 4. Change Orders and other Modifications to the Contract
- B. Store Record Documents separate from documents used for construction.
- C. Record information concurrent with construction progress.
- D. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:
  - 1. Manufacturer's name and product model and number.
  - 2. Product substitutions or alternates utilized.
  - 3. Changes made by Addenda and Modifications.
- E. Contract Drawings and Shop Drawings: Legibly mark each item to record actual construction including:



1. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  2. Field changes of dimension and detail.
  3. Details not on original Contract Drawings.
- F. Waste Shipment Record (WSR): WSRs shall be maintained at the scale house building at the landfill throughout the Contract period. WSRs shall be maintained in accordance with 40 CRF 61.154 and ARM 17.50.511.

#### 1.04 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for CO/COTR's inspection.
- B. Provide submittals to CO/COTR that are required by governing or other authorities.
- C. Submit Application for Final Payment identifying total adjusted contract sum, previous payments, and sum remaining due.
- D. Provide waste shipment records to CO upon completion of Contract period.

#### 1.05 FINAL CLEANING / REMOVALS

- A. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.
- B. Remove all construction related debris.
- C. Remove water and debris from the decontamination pad sump and transport and dispose of materials in the landfill cell.

**END OF SECTION**

## SECTION 01740

### WARRANTIES AND FINAL GUARANTEE

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. This section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturers standard warranties on products, and special warranties.

##### 1.02 RELATED WORK

- A. Refer to Conditions of Contract for the general requirements relating to warranties and bonds.
- B. General closeout requirements are included in Section 01700 Contract Closeout.

##### 1.03 SUBMITTALS

- A. Submit written warranties to the Government prior to the date fixed by the CO/COTR for Substantial Completion. If the Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Government.
- B. When a designated portion of the Work is completed and occupied or used by the Government, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Government within 15 days of completion of that designated portion of the Work.
- C. When a special warranty is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Government for approval prior to final execution.

##### 1.04 WARRANTIES

- A. All materials supplied under these Technical Specifications shall be warranted by the Contractor and the equipment manufacturers for a period of one year or for the normal routine warranty period for the materials, which ever is greater. Warranty period shall commence on the date of Government acceptance.
- B. The equipment shall be warranted to be free from defects in workmanship, design, and materials. If any part of the equipment should fail during the warranty period, it shall be replaced in the machine(s) and the unit(s) restored to service at no expense to the Government.

##### 1.05 WARRANTY REQUIREMENT

- A. **Related Damages and Losses:** When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.
- B. **Reinstatement of Warranty:** When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- C. **Replacement Cost:** Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Government has benefitted from use of the Work through a portion of its anticipated useful service life.
- D. **Government's Recourse:** Written warranties made to the Government are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Government can enforce such other duties, obligations, rights, or remedies.
- E. **Rejection of Warranties:** The Government reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.
- F. The Government reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.
- G. **Disclaimers and Limitations:** Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers and subcontractors required to countersign special warranties with the Contractor.

#### 1.06 FINAL GUARANTEE

- A. All work shall be guaranteed by the Contractor for a period of one year from and after the date of acceptance of the work by the Government.
- B. If, within the guarantee period, repairs or changes are required in connection with guaranteed work, which, in the opinion of the CO/COTR, is rendered necessary as the result of the use of materials, equipment, or workmanship which are inferior, defective, or not in accordance with the terms of the Contract, promptly upon receipt of notice from the Government and without expense to the Government, do the following:
  - 1. Place in satisfactory condition in every particular all of such guaranteed work and correct all defects therein.
  - 2. Make good all damage to the building or site, or equipment, or contents thereof, which, in the opinion of the CO/COTR, is the result of the use of materials, equipment, or workmanship which are inferior, defective, or not in accordance with the terms of the Contract.

3. Make good any work or material, or the equipment and contents of building, structure of site disturbed in fulfilling any such guarantee.

C. If the Contractor, after notice, fails within 10 days to proceed to comply with the terms of this guarantee, the Government may have the defects corrected, and the Contractor and his/her surety shall be liable for all expense incurred, provided, however, that in case of an emergency where, in the opinion of the Government, delay would cause loss or damage, repairs may be started without notice being given to the Contractor and the Contractor shall pay the cost thereof.

D. All special guarantees or warranties applicable to specific parts of the work, as may be stipulated in the Contract, Technical Specifications, or other papers forming a part of this Contract, shall be subject to the terms of this paragraph during the first year of life of each such guarantee. All special guarantees and manufacturers' warranties shall be assembled by the Contractor and delivered to the CO/COTR, along with a summary list thereof, before the acceptance of the work.

#### 1.07 DEFINITIONS

A. Standard Product Warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Government.

B. Special Warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Government.

#### PART 2 PRODUCTS (NOT USED)

#### PART 3 EXECUTION (NOT USED)

#### END OF SECTION

## SECTION 02110

### CLEARING, GRUBBING, AND STRIPPING

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. The work necessary to remove all interfering or objectionable vegetative material from the designated areas of work as shown on the Drawings or designated in the Technical Specifications. Specifically, the area to be stripped is the Class IV landfill.
- B. The work and precautions necessary to preserve from injury or defacement all vegetation and existing objects designated to remain, as shown on the Drawings or as specified herein.

##### 1.02 RELATED WORK

- A. Section 02200 Earthwork - General
- B. Section 02231 Earthen/Granular Material

##### 1.03 SUBMITTALS

- A. The Contractor shall submit to the CO/COTR, as provided in Section 01300, information noted below.
  - 1. Submit one copy of all surveying data, volume calculations, and cross sections for the cleared, grubbed, and stripped area, including electronic and *CADD* file versions.
  - 2. Submit quantity surveys of all grubbing and stripping operations.
  - 3. Quantity Surveys

Upon completion of grubbing and stripping, the Contractor shall perform, plot, and submit quantity cross section surveys at a maximum of 50-foot intervals and all transitions and break points. All sections shall be taken at locations corresponding to the original surveys. They shall be plotted by the Contractor on a minimum scale of 1 inch equals 50 feet horizontally and 1 inch equals 5 feet vertically with the theoretical design cross sections and allowable grade tolerances superimposed thereon. Additionally, the Contractor shall perform, plot, and submit a longitudinal profile after stripping with shots taken at a maximum of 20-foot intervals.

#### PART 2 PRODUCTS

##### 2.01 GENERAL

- A. Provide all materials and equipment in suitable and adequate quantity and quality as required to accomplish the work shown and specified herein.

#### PART 3 EXECUTION

### 3.01 GENERAL

- A. All material from stripping shall be placed in an onsite pile in a location to be determined by the CO/COTR and approved by Lincoln County. Clearing and grubbing of the landfill area will be completed during a previous contract. Any remaining material requiring grubbing shall be placed at the south end of the Class IV landfill area. The top 6-inches of material required for cover topsoil will be segregated and stockpiled south of the landfill cell as directed by the CO/COTR. Any extra soil from stripping shall be stockpiled in the general use stockpile area as shown on the Drawings.
- B. The Contractor shall review with the CO/COTR the location, limits, and methods to be used prior to commencing the work under this Section.

### 3.02 CLEARING

- A. There are no trees located on the site that will require clearing. All clearing will be performed by Lincoln County prior to the start of Work.

### 3.03 GRUBBING

- A. Grubbing of the entire Class IV landfill area will be performed during a previous construction contract.
- B. Any remaining vegetative material, including all stumps, brush, shrubs, roots and any other objectionable material shall be cut, grubbed, removed and disposed of within the limits shown on the Drawings, except as otherwise directed by the CO/COTR.
- C. Protect trees or groups of trees, designated by the CO/COTR to remain, from damage by all construction operations by erecting suitable barriers, or by other approved means. Clearing operations shall be conducted in a manner to prevent falling trees from damaging trees designated to remain.
- D. No stumps, trees, limbs, or brush shall be buried in any fills or embankments.

### 3.04 STRIPPING

- A. Strip all areas within the limits of the landfill as shown on the Drawings and as approved by the CO/COTR.
- B. Stripping shall include the removal and disposal of all organic sod, topsoil, grass, grass roots, and other objectionable material from the areas designated to be stripped. Avoid mixing topsoil with subsoil and stockpile topsoil in areas on the site as approved by the CO/COTR and Lincoln County. Topsoil shall be free from brush, trash, large stones and other extraneous material and protected in the stockpile location shown on the Drawings. The depth of stripping shall be 2 feet, unless otherwise approved by the CO/COTR. The top 6-inches of topsoil shall be stockpiled in the final cover soil stockpile area. The remaining stripped soil shall be placed in the general use stockpile.

### 3.05 DISPOSAL OF MATERIALS

- A. All tree trunks, limbs, roots, stumps, brush, foliage, other vegetation and objectionable material shall be stockpiled on site in an area designated on the Drawings and approved by

Lincoln County.

**B. Disposal of Strippings**

1. Vegetative matter shall be placed on site in an area designated on the Drawings and approved by Lincoln County.
2. Topsoil from stripping required for use in the final landfill cover shall stockpiled south of the current landfill cell. Extra topsoil shall be placed in the general use stockpile as shown on the Drawings.

**PART 4 MEASUREMENT AND PAYMENT**

**4.01 MEASUREMENT**

- A.** Materials that are grubbed and stripped will be measured for payment by the in-place cubic yard, and quantities determined by the average end area method. The basis for the measurement will be the original cross sections taken prior to grubbing, and the final cross sections taken after stripping.

**4.02 PAYMENT**

- B.** Payment for grubbing and stripping will be made at the in-place cubic yard for bid item "Topsoil Stripping." Price and payment shall constitute full compensation for furnishing all plant, labor, equipment, and material, and performing all operations necessary for clearing, grubbing, stripping and transporting, and all incidental costs thereto.

**END OF SECTION**

## SECTION 02141

### LANDFILL OPERATION

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and perform all Class IV landfill operations and maintenance work as shown on the Drawings and as specified herein. The work shall include, but not necessarily be limited to: operation of the truck scale weigh station and associated record keeping which meets state and federal requirements, waste disposal in the landfill cells and application of daily cover, maintenance of the site fencing and signage and site security, equipment decontamination, and maintenance of site access roads, including snow removal.
- B. An Operations Plan, prepared by the CO/COTR shall be provided to the Contractor.

##### 1.02 RELATED WORK

- A. Section 01562 Dust Control
- B. Section 02110 Clearing, Grubbing, and Stripping
- C. Section 02200 Earthwork - General
- D. Section 02223 Backfilling and Compaction
- E. Section 02231 Earthen/Granular Material

##### 1.03 REFERENCES

- A. National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR Part 61; Subpart M, National Emission Standard for Asbestos.
- B. Department of Environmental Quality Administrative Rules of Montana (ARM) Sub-Chapters 4 and 5.
- C. U.S. Department of Agriculture (USDA), *Forest Service Specifications for Construction of Roads and Bridges*. August 1996.
- D. Guidelines for Asbestos NESHAP Landfill Recordkeeping Inspections, U.S. EPA, March 1992.

##### 1.04 SUBMITTALS

- A. The Contractor shall submit to the CO/COTR, as provided in Section 01300 information as noted below.



1. The name of any Subcontractors to perform any of the Work of this section, if applicable.
2. An Operations Plan outlining the Contractors plan for executing the Work of this section.
3. A Site Security Plan.
4. Copies of all waste disposal records, on a monthly basis.

## **PART 2 PRODUCTS**

### **2.01 EQUIPMENT**

- A. The Contractor shall have on site at all times during waste disposal, an extended reach excavator equipped with a vibratory plate compactor capable of placing, moving, and compacting waste material in the landfill cells as shown in the Drawings.
- B. During operating hours, the Contractor shall have on site one water truck with a minimum capacity of 1,000 gallons. The water truck shall be used to obtain water for decontamination, dust control, waste disposal, and other operational purposes. The water truck shall be capable of spraying the full width of the access roads and the waste material during disposal.
- C. The Contractor shall supply a gas-powered water pump and hot water pressure washer for use in equipment decontamination. The pump and pressure washer shall be capable of pumping water from the poly underground storage tank (UST) at sufficient pressure to remove all debris from haul trucks, construction equipment, and any other items which may have come into contact with asbestos containing materials.
- D. The Contractor shall provide a snowplow as necessary to remove snow accumulations which may affect landfill operations. Any snow event or sequence of events greater than 2-inches shall be plowed.

### **2.02 PERSONNEL**

- A. Personnel trained and qualified to perform all phases of landfill operation shall be present on site during landfill operating hours. The number of personnel shall be adequate to ensure continuous operation of the Work specified in this Section and the Work of this Contract. The Contractor shall be responsible for site operation, maintenance, and security.

### **2.03 WATER**

- A. Obtaining water for all landfill operations, including decontamination water, and water used during waste disposal shall be the responsibility of the Contractor. There is no water available on site.
- B. Water shall be clear, free of contaminants, and meet all EPA and state regulations.

## **PART 3 EXECUTION**

### **3.01 SITE SECURITY**

- A. While the landfill is accepting asbestos containing material for disposal and during landfill closure activities, only OSHA 40-hour hazardous waste trained personnel shall be allowed in the exclusion zone. Additionally, only those personnel who have been trained in the site specific operating procedures on site will be allowed in the active disposal area of the site. The Contractor shall be responsible for ensuring that no unauthorized persons enter the active disposal site.
- B. The Contractor shall be responsible for maintaining the site fence and asbestos warning signs, and overall Class IV landfill security.

### **3.02 TRAFFIC ROUTING**

- A. Operation of the Lincoln County Class III and IV landfill will occur simultaneously with asbestos containing material disposal at the Class IV landfill. Truck traffic shall not interfere with Lincoln County operations.
- B. The Contractor shall maintain all traffic control signs installed by the Phase I construction contractor in order to control traffic flow through the site. These signs include but are not limited to directional signs to the decontamination pad, traffic directional signs on landfill perimeter road, weigh station signs, and locations signs for the asbestos landfill.

### **3.03 WASTE LOAD WEIGHING AND RECORD KEEPING**

- A. The Contractor shall operate and maintain the scale, and scale house, including performing all operation and maintenance activities required by the Operations and Maintenance Plan.
- B. All haul trucks carrying asbestos containing material for disposal in the Class IV landfill shall be weighed upon arrival at the landfill and upon exiting, after disposing of the materials.
- C. The weigh station will be equipped with a computer system to record waste loads. The Contractor shall become trained to use the computer system and perform all required recordkeeping as required in the regulations listed in Section 1.03.
- D. Records shall be provided in paper-format to the CO/COTR once per month.

### **3.04 SNOW REMOVAL**

- A. Perform snow removal operations, in an approved manner, whenever necessary or when directed by the CO/COTR.
- B. Snow removal shall be conducted in order to maintain landfill operations during the winter months and shall include plowing of entry and access roads, cleaning snow from the truck weigh scale, and decontamination pad.
- C. Cleared snow shall be stockpiled as directed by the CO/COTR in a location approved by

Lincoln County.

- D. Snow removal will be required any time a single event or combination of events deposits 2 or more inches of snow.

### 3.05 WASTE DISPOSAL

- A. All personnel engaged in the disposal of asbestos containing materials, including haul truck drivers, and excavator operators, and all personnel within the limits of the landfill exclusion zone, shall be wearing Level C personal protective equipment, including an air purifying respirator.
- B. No personnel or equipment shall enter the landfill cells at any time. Asbestos containing materials will be dumped into the landfill cell from haul trucks positioned at the ground surface.
  - 1. Non-friable asbestos can be end-dumped from haul trucks or roll-off boxes directly into the landfill cell.
  - 2. Bagged friable asbestos shall be placed into the landfill cell with the excavator using webbed netting, slings, or rigging.
- C. Water shall be applied to waste material via water truck as it is placed in the landfill cell. Waste materials shall be wetted until the materials are covered with a minimum of 6-inches of daily cover soil.
- D. Using the extended reach excavator bucket, arrange the waste material into a uniform layer, add daily cover and compact using a plate compactor attached to the excavator bucket.
- E. Any visible wind-blown asbestos containing material or debris shall not be permitted at the landfill cells or on the access roads. During period of high winds, if wind-blown debris cannot be controlled by the use of water and the application of daily cover soil, operations shall be suspended until conditions for disposal improve.

### 3.06 DAILY COVER PLACEMENT

- A. Daily cover soil shall be placed on the waste material disposed of in the landfill cell at a minimum of once per day.
- B. Daily cover soil shall be common fill material as specified in Section 02231. The daily cover soil shall be material excavated from the landfill cells or soil from another source approved by the CO/COTR.
- C. Following application, the daily cover soil layer shall be compacted using a vibratory plate compactor attached to the excavator bucket, with a minimum of 2 passes or until reasonable compaction is achieved.

### 3.07 DECONTAMINATION

- A. All trucks and construction equipment that are in contact with asbestos containing material

shall be decontaminated prior to leaving the landfill area.

**B. Decontamination shall be performed at the decontamination pad as shown on the Drawings.**

1. Gross decontamination of equipment shall be performed within the landfill area prior to entering the decontamination pad.
2. The Contractor shall be responsible for supplying adequate water for decontamination, and for filling the poly UST at the decon pad.
3. The Contractor shall provide a pump and pressure washer to pump water from the UST for decontamination of the trucks and equipment.
4. Decontamination of trucks and excavators shall include the pressure washing of truck/box beds and excavator buckets, and of truck tires or excavator tracks if the tires/tracks have been in contact with the asbestos containing materials.
5. All disposable PPE shall be collected in bags at the decontamination pad and disposed of in the active landfill cell. Non-disposable PPE shall be cleaned at the decontamination pad
6. Contractor shall be responsible for pumping the water from the decon pad sump and removing sediment from the sump. Water and sediment can be placed back into an excavated landfill cell. Frequent winter cleaning of the sump will be necessary to minimize freezing.

**PART 4 MEASUREMENT AND PAYMENT**

**4.01 MEASUREMENT**

1. Measurement for the work of this section shall be by the tons of waste disposed in the Class IV asbestos landfill (of portions thereof). Waste tonnage shall be measured based on the weight of the waste as measured using the onsite scale and as recorded in the recordkeeping documents maintained by the Contractor as part of the Work of this section.

**4.02 PAYMENT**

1. Payment for the work of this section shall be per ton of waste disposed of, as noted under measurement, at the contract unit price for "Landfill Operation." Payment shall include all of the administrative, personnel, equipment, direct and indirect costs for the landfill operation and maintenance work of this section.

**END OF SECTION**

## SECTION 02200

### EARTHWORK - GENERAL

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. This Section includes the work necessary for general earthwork.
- B. Furnish all labor, supervision, materials, equipment, tools, permits, and incidentals necessary to perform excavation, filling, backfilling, and grading of the areas specified herein plus any additional excavation required for establishment of operations. The work as described under this Section shall include all excavation, backfilling, compacting, grading, and related work to construct landfill cells, place waste material and daily cover, place, grade, and compact cover materials, and other landfill operation and maintenance or site work requiring earthwork.
- C. During construction, excavation, filling, backfilling, and grading shall be performed in a manner and sequence that will minimize multiple handling of soil material.
- D. The Contractor shall examine the site and review the available monitoring well borings data and soil borings data, taking into consideration all conditions that may affect their work.
- E. The Contractor shall follow their safety, health, and emergency response procedures.
- F. Excavated soils will be stockpiled in the areas shown on the Drawings or otherwise directed by the CO/COTR as approved by Lincoln County.
- G. Government will conduct air sampling during excavation and other onsite activities. Dust control shall be maintained at all times.

##### 1.02 RELATED WORK

- A. Section 01300 Submittals
- B. Section 02110 Clearing, Grubbing and Stripping
- C. Section 02210 Site Grading
- D. Section 02223 Backfilling and Compaction
- E. Section 02231 Earthen/Granular Material
- F. Section 02270 Erosion and Sedimentation Control
- G. Section 02618 Culverts
- H. Section 02713 Stormwater Management
- I. Section 02935 Site Surface Revegetation

### 1.03 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM)
  - 1. ASTM D1557 – Standard Test Method for Laboratory Compaction Characteristics of Soil using Modified Efforts (56,000 ft-lbf/ft<sup>3</sup>) (2,700 kN-m/m<sup>3</sup>)
  - 2. ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
  - 3. ASTM D3017 - Test Method for Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
  - 4. ASTM D3740 - Standard Practice for Evaluation of Agencies Engaged in the Testing and/or Inspection of Soil and Rock as used in Engineering Design and Construction
- B. Occupational Safety and Health Administration (OSHA) 29 CFR Part 1926, Construction Industry.
- C. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

### 1.04 SUBMITTALS

- A. The Contractor shall submit to the CO/COTR, as provided in Section 01300, information noted below.
  - 1. Submit one copy of all surveying data, volume calculations, and cross sections for the landfill cell excavation area, including electronic and *CADD* file versions.
  - 2. Submit quantity surveys of the excavation area.
  - 3. Quantity Surveys

Upon completion of excavation, the Contractor shall perform, plot, and submit quantity cross section surveys at a maximum of 50-foot intervals and all transitions and break points. All sections shall be taken at locations corresponding to the original surveys. They shall be plotted by the Contractor on a minimum scale of 1 inch equals 50 feet horizontally and 1 inch equals 5 feet vertically with the theoretical design cross sections and allowable grade tolerances superimposed thereon. Additionally, the Contractor shall perform, plot, and submit a longitudinal profile after excavation with shots taken at a maximum of 20-foot intervals.
  - 4. Submit two copies of all laboratory and field test reports within 24 hours of the completion of the test.

### 1.05 QUALITY ASSURANCE

- A. The CO/COTR will determine by observation and testing, the quality of work and

materials during earthwork operations. The CO/COTR will verify: adequacy of site preparation; suitability of bearing material at excavation levels; acceptability of available fill material; and the correct placement and compaction of fill and backfill to specified densities. Stripping, excavating, filling, backfilling and compacting procedures require the CO/COTR's approval as they are performed. All work found unsatisfactory shall be corrected in an approved manner at no additional cost to the Government.

- B. In-place density may be tested by methods described in ASTM D2922 to ensure that the backfill and fill has been properly compacted.

## 1.06 DEFINITIONS

- A. Degree of Compaction: Degree of compaction shall be expressed as a percentage of maximum dry density determined by a tested procedure presented in ASTM D1557.
- B. Optimum Moisture Content: The maximum dry density for relative compaction. Field moisture content shall be determined on the basis of the soil fraction passing the 3/4-inch sieve.
- C. Prepared Ground Surface: The ground surface after clearing, grubbing, stripping, excavation, and scarification and/or compaction.
- D. Completed Course: A course or layer that is ready for the next layer or next phase of the work.
- E. Well-Graded: A mixture of particle sizes that has no specific concentration or lack of one or more sizes. Well-graded does not define any numerical value that must be placed on the coefficient of uniformity, coefficient of curvature, or other specific grain size distribution parameters. Well-graded is used to define a material type that, when compacted, produces a strong and relatively incompressible soil mass free from detrimental voids.
- F. Influence Area: The area within planes sloped downward and outward at an angle of 60 degrees from the horizontal from (a) 1 foot outside the outermost edge at the base of foundations or slabs; or (b) 1 foot outside the outermost edge at the surface of roadways or shoulder; or (c) 0.5 foot outside the exterior edge at the spring line of pipes and culverts.

## 1.06 HEALTH AND SAFETY

- A. No personnel will be permitted access in the cell excavations. If access is required, the cell side slopes shall be excavated to a safe working slope. Modification of side slopes shall require permission from the CO/COTR prior to excavation.

## PART 2 PRODUCTS

### 2.01 GENERAL

- A. Provide all materials and equipment in suitable and adequate quantity and quality as required to accomplish the work shown and specified herein.
- B. Soils excavated for the landfill cells shall be stockpiled for use as daily cover material for landfill operation.

- C. The top 6-inches of stripped topsoil will be stockpiled for use as final cover if they meet the requirements specified herein.
- D. All materials shall be in accordance with Section 02231.

## 2.02 COMPACTION EQUIPMENT

- A. Compaction equipment shall be of suitable type and adequate to obtain the densities specified, and shall provide satisfactory breakdown of materials to form a dense fill. Smooth steel-wheeled rollers will not be permitted for compaction of cohesive material; it shall be compacted with pneumatic tire, tamping foot, sheepsfoot rollers or vibratory plate compactors unless the Contractor can demonstrate, to the satisfaction of the CO/COTR, that other equipment will produce satisfactory results.
- B. Compaction equipment shall be operated in strict accordance with the manufacturer's instructions and recommendations. Equipment shall be maintained in such condition that it will deliver the manufacturer's rated compactive effort. If specified densities are not obtained, larger and/or different types of additional equipment shall be provided by the Contractor. Hand-operated equipment shall be capable of achieving the specified densities.

## 2.03 MOISTURE CONTROL EQUIPMENT

- A. Equipment for applying water shall be of a type and quality adequate for the work, shall not leak, and shall be equipped with a pressurized distribution system to assure uniform application. Equipment for discing and drying out material shall consist of blades, discs, or other approved equipment.

# PART 3 EXECUTION

## 3.01 GENERAL

- A. No equipment shall be operated within 5 feet of existing wells. Any work that cannot be accomplished without endangering existing wells or other site facilities shall be performed with hand tools.

## 3.02 CLEARING, GRUBBING, AND STRIPPING

- A. Complete clearing, grubbing, and stripping work, as specified in the Section 02110, prior to beginning work in this Section.

## 3.03 EXCAVATION FOR LANDFILL CELLS

- A. Excavate to the depths and widths shown on the Drawings. Allow for working space and finish topsoil as shown or required. Excavation carried below the grade lines shown or established by the CO/COTR shall be replaced with the same fill material as specified for the overlying fill or backfill, and compacted as required for such overlying fill or backfill. Where the overlying area is not to receive fill or backfill, replace the over-excavated material and compact to a density not less than that of the underlying ground. Cuts below grade shall be corrected by similarly cutting adjoining areas and creating a smooth transition. Correct all over-excavated areas at the Contractor's sole expense.



- B. Soil shall be excavated from Landfill Cells B through M to the dimensions and side-slopes as shown on the Drawings. Adequate excavated soil materials shall be placed in the Daily Cover Use Stockpile for use as daily cover soil during landfill operation. The remaining soils shall be placed in the General Use Stockpile.

### 3.05 FILL AND BACKFILL PLACEMENT

- A. Asbestos Waste Materials: Waste shall be disposed in the landfill cells directly from the haul trucks. Adjust the waste to uniform lifts and compact using excavator bucket equipped with plate vibrator.
- B. Daily Cover Soil: At least 6-inches of daily cover soil shall be placed on the waste a minimum of once per day. The daily cover soil shall be compacted using a plate vibrator attached to the excavator.
- C. Final Landfill Cover: Final landfill cover shall consist of a 18-inch layer of low permeability soil with permeability no greater than  $1 \times 10^{-5}$  cm/sec. The low permeability layer shall be placed in 3/4 foot lifts and compacted to \_\_\_\_ (**determine from geotechnical investigation**) percent maximum density as determined by ASTM D1557 (Modified Proctor). On top of the infiltration layer, there shall be a 6-inch seed bed layer of topsoil. Final grading shall assure proper and adequate drainage of landfill cover as shown on the Drawings.

### 3.10 COMPACTION

- A. Compact all materials by mechanical means. Flooding or jetting is prohibited. If compaction tests indicated that compaction or moisture content is not as specified, material placement shall be terminated and corrective action shall be taken by the Contractor prior to continued placement.

### 3.11 MOISTURE CONTROL

- A. During all compacting operations, maintain optimum practicable moisture content required for compaction purposes in each lift of fill. Maintain moisture content uniform throughout the lift. At the time of compaction, the moisture content of the material shall be at optimum moisture content,  $\pm 2$  percent points unless otherwise specified.
- B. Do not attempt to compact material that contains too little moisture. Insofar as practicable, add water to the material at the site of excavation. Supplement, if required, by sprinkling the fill.
- C. Do not attempt to compact material that contains excessive moisture. Aerate material by blading, discing, harrowing, or other methods, to hasten the drying process.

### 3.12 DISPOSAL OF EXCESS EXCAVATION

- A. Dispose of all excess excavation, not required or suitable for use as daily cover or final cover topsoil layer onsite in the General Use Stockpile. Conform to the Section 02210, uniformly grade excess material to conform to existing contours, leave with a neat appearance, and in free-draining condition.

### 3.13 PLACING TOPSOIL

- A. Topsoil shall be stockpiled in the location shown on the Drawings for use as final landfill cover as specified in Section 02110.

### 3.14 SITE GRADING

- A. See the Section 02210.

### 3.15 DUST CONTROL

- A. Provide a minimum 1,000 gallon capacity water truck to control dust during construction.

### 3.16 TESTING

- A. Testing shall be the responsibility of the Contractor and shall be performed at no additional cost to the Government.
- B. Testing Facilities: Tests shall be performed by an approved commercial testing laboratory or may be tested by the Contractor subject to approval.
- C. Testing of Backfill Materials: Characteristics of backfill materials shall be determined. A minimum of one particle size analysis and one moisture-density relation test shall be performed on each different type of material used for bedding and backfill for every 1,500 cy of material placed. The CO/COTR will determine the different types of material that shall be tested by the Contractor.
- D. Field Density Tests
  - 1. Tests shall be performed in sufficient numbers to ensure that the specified density is being obtained.
  - 2. Field density testing will not be performed of the compacted waste and daily cover material.
  - 3. One field density test per lift of backfill for every 2,500 square feet of compacted low permeability cover material shall be performed.
  - 2. Backfilled areas improperly compacted shall be recompact and tested to the density specified at no additional cost to the Government.

## PART 4 MEASUREMENT AND PAYMENT

### 4.01 EXCAVATION OF LANDFILL CELLS

- A. Measurement
  - 1. Materials that are excavated from landfill Cells will be measured for payment by the in-place cubic yard, and quantities determined by the average end area method. The basis for the measurement will be the original cross sections taken prior to excavation, and the final cross sections taken after excavation.

B. Payment

1. Payment for excavation of landfill Cells will be made at the in-place cubic yard for bid item "Excavation." Price and payment shall constitute full compensation for furnishing all labor, equipment, and material, and performing all operations necessary for the excavation of landfill Cells, and all incidental costs thereto.

4.02 ALL OTHER GENERAL EARTHWORK

- A. No separate measurement and payment will be made for any earthwork specified in this Section except for the excavation of landfill Cells. All work specified in this Section except the excavation of landfill Cells will be considered incidental to the work specified in other sections.

**END OF SECTION**

## SECTION 02210

### SITE GRADING

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. This Section includes the work necessary for general site grading as shown on the Drawings and specified herein.

##### 1.02 RELATED WORK

- A. Section 01300 Submittals
- B. Section 02110 Clearing, Grubbing, and Stripping
- C. Section 02200 Earthwork - General
- D. Section 02223 Backfilling and Compaction
- E. Section 02231 Earthen/Granular Materials
- F. Section 02713 Stormwater Management

#### PART 2 PRODUCTS

##### 2.01 GENERAL

- A. Provide all materials and equipment in suitable and adequate quantity as required to accomplish the work shown and specified herein.

##### 2.02 COMMON FILL

- A. See Common Fill as specified in Section 02231.

##### 2.03 TOPSOIL

- A. See Topsoil as specified in Section 02231.

#### PART 3 EXECUTION

##### 3.01 FINISHED EXCAVATION AND FILLS

- A. All areas covered by the project, including excavated and filled sections and adjacent transition areas, shall be uniformly smooth-graded. The finished surface shall be reasonably smooth, compacted, and free from irregular surface changes. The degree of finish shall be that ordinarily obtainable from blade-grader operations, except as otherwise specified. Ditches and gutters shall be finished to permit adequate drainage. The surface of areas to be revegetated shall be finished to a smoothness suitable for the application of revegetation materials. The surface of excavated areas for road construction or other areas on which a surface course is to be placed shall vary not more than  $\pm 0.10$  foot from the

established grade and approved cross section. Surfaces shall be finished not more than  $\pm 0.30$  foot above or below the established grade or approved cross section.

### **3.02 DITCHES AND CHANNEL CHANGES**

- A. Ditches and channel changes shall be cut accurately to the cross sections and grades indicated on the Drawings. All roots, stumps, rock, and foreign matter in the sides and bottom of ditches and channel changes shall be trimmed and dressed or removed to conform to the slope, grade, and shape as required. Care shall be taken not to excavate ditches below the grades as indicated on the Drawings. Excessive ditch and gutter excavation shall be backfilled and thoroughly compacted to grade with satisfactory material. All ditches excavated under this Section shall be maintained until final acceptance of the work. Satisfactory material excavated from ditches and channel changes shall be placed in fill areas. Unsatisfactory and excess excavated material shall be disposed of in accordance with directions in paragraph 3.04, "Disposal of Excess Excavation" of this Section. No excavated material shall be deposited closer to the edges of the ditches than 3 feet.

### **3.03 PROTECTION**

- A. Newly graded areas shall be protected from traffic and from erosion, and any settlement or washing away that may occur from any cause, prior to acceptance, shall be repaired and grades reestablished to the required elevations and slopes. All work shall be conducted in accordance with the environmental protection requirements of the contract.

### **3.04 DISPOSAL OF EXCESS EXCAVATION**

- A. Uniformly grade excess material to conform to existing contours, leave with a neat appearance, and in free-draining condition.

## **PART 4 MEASUREMENT AND PAYMENT**

### **4.01 MEASUREMENT AND PAYMENT**

- A. No separate measurement and payment will be made for all work specified in this Section. All work specified in this Section will be considered incidental to the work specified in other sections.

**END OF SECTION**

## SECTION 02223

### BACKFILLING AND COMPACTION

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Furnish all labor, materials, and incidentals necessary to perform all backfilling and compaction activities including adjustment and compaction of waste materials, placement and compaction of daily cover materials, and construction of landfill final cover.
- B. Government will conduct air sampling during the operation of the landfill. Dust control shall be maintained at all times.

##### 1.02 RELATED WORK

- A. Section 01300 Submittals
- B. Section 02200 Earthwork – General
- C. Section 02210 Site Grading
- D. Section 02231 Earthen/Granular Materials
- E. Section 02618 Culverts

##### 1.03 SUBMITTALS

- A. The Contractor shall submit to the CO/COTR, as provided in Section 01300, information noted below.
  - 1. Submit one copy of all surveying data, volume calculations, and cross sections for each backfill area, including electronic and *CADD* file versions.
  - 2. Submit quantity surveys of all backfill operations.
  - 3. Quantity Surveys

Upon completion of backfilling operations, the Contractor shall perform, plot, and submit quantity cross section surveys at a maximum of 50-foot intervals and all transitions and break points. All sections shall be taken at locations corresponding to the original surveys. They shall be plotted by the Contractor on a minimum scale of 1 inch equals 50 feet horizontally and 1 inch equals 5 feet vertically with the theoretical design cross sections and allowable grade tolerances superimposed thereon. Additionally, the Contractor shall perform, plot, and submit a longitudinal profile after backfilling with shots taken at a maximum of 20-foot intervals.

- 5. Submit two copies of all laboratory and field test reports within 24 hours of the completion of the test.

#### 1.04 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM)
  - 1. ASTM D1557 – Standard Test Method for Laboratory Compaction Characteristics of Soil using Modified Efforts (56,000 ft-lbf/ft<sup>3</sup>) (2,700 kN-m/m<sup>3</sup>)
- B. Occupational Safety and Health Administration (OSHA)
  - 1. 29 CFR 1926 - Construction Industry
  - 2. 40 CFR 1910
- C. Montana Department of Transportation (MDT). *Standard Specifications for Road and Bridge Construction* (MDOTSS). 1995.
- D. Montana Public Works Standard Specifications (MPWSS).
- E. Department of Environmental Quality Administrative Rules of Montana (ARM) Sub-Chapter 5.
- F. There reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

#### 1.05 DEFINITIONS

- A. Degree of Compaction  
  
Degree of compaction shall be expressed as a percentage of maximum dry density determined by a tested procedure presented in ASTM D1557.

### PART 2 PRODUCTS

#### 2.01 COMMON FILL MATERIALS

- A. Common fill materials shall come from onsite sources, specifically overburden excavated from landfill cell excavation. Common fill materials shall meet the common fill material requirements specified in Section 02231.

#### 2.02 TOPSOIL

- A. Selected topsoil obtained from stripping as specified in Section 02210 may be used as the seed bed layer of the final cover. Topsoil shall meet the common fill material requirements specified in Section 02231.

#### 2.03 LANDFILL LOW PERMEABILITY LAYER COVER SOIL

- A. The low permeability soil used as final cover shall meet the requirements specified in Section 02231. Specifically, the cover soil must minimize infiltration and have a permeability no greater than  $1 \times 10^{-5}$  cm/sec. Low permeability soils shall be obtained from a borrow source on site as directed by the CO/COTR and approved by Lincoln County.

## **PART 3      EXECUTION**

### **3.01    GENERAL**

- A.    Survey site immediately after completing the backfilling and compacting operations in conformance with this Section.

### **3.02    WASTE PLACEMENT AND COMPACTION**

#### **A.    Backfilling**

- 1.    Waste shall be dumped into landfill cell from the haul truck parked on the ground surface. Haul trucks shall not enter the landfill cell.

- B.    Contractor shall adjust waste within the cell to a uniform level using an excavator.

#### **C.    Compaction**

- 1.    Contractor shall compact material using the excavator bucket with a vibratory plate attachment. A minimum of 2 passes shall be made with the vibratory compactor.

- D.    Contractor shall wet waste materials continuously using the water truck during waste disposal.

- E.    If windblown dust and asbestos containing debris cannot be controlled using water application on windy days, waste disposal shall cease until wind conditions improve.

### **3.03    DAILY COVER SOIL**

#### **A.    Backfilling**

- 1.    Daily cover shall be common fill material obtained from landfill cell excavation material stockpiled adjacent to the cell and shall be free of debris meeting the requirements of daily cover as specified in ARM 17.50 Sub-Chapter 5.
- 2.    Contractor shall apply a minimum of 6-inches of daily cover soil over the waste materials.
- 3.    Cover soils shall be backfilled a minimum of once per day. Cover shall be applied at a higher frequency if necessary to minimize migration of asbestos waste.

#### **B.    Compaction**

- 1.    Contractor shall compact daily cover soils using the excavator bucket with a vibratory plate attachment. A minimum of 2 passes shall be made with the vibratory compactor.

### **3.04    LANDFILL FINAL COVER SOIL**

#### **A.    Backfilling**



1. No infiltration layer soil or topsoil material shall be placed or spread while the ground or fill is frozen or thawing or during unfavorable weather conditions such as rain.
2. Landfill cover low permeability soil layer shall be 18-inches of low permeability material with a permeability no greater than  $1 \times 10^{-5}$  cm/sec as specified in Section 02231. Low permeability layer soil shall be native soil material obtained from a local borrow source designated by CO/COTR and approved by Lincoln County. It is the responsibility of the Contractor to excavate the low permeability soil from the borrow area, haul the material to the landfill cells, place, and compact the material.
3. Landfill seed bed layer shall be 6-inches of topsoil as specified in Section 02231. Topsoil shall be material stripped from the site and stockpiled as specified in Section 02110

B. **Compaction**

1. The 18-inch low permeability soil layer landfill cover shall be compacted to not less than \_\_\_\_ (**Finalize during Geotechnical Investigation**) percent maximum density as determined by ASTM D1557 (Modified Proctor).

3.05 **GRADING**

- A. The backfilled areas shall be rough graded as shown on the Drawings and specified in Section 02210.

3.06 **TESTING**

- A. Testing shall be the responsibility of the Contractor and shall be performed at no additional cost to the Government.

B. **Testing Facilities**

Tests shall be performed by an approved commercial testing laboratory or may be tested by the Contractor subject to approval.

C. **Testing of Infiltration Layer Soils**

Field density testing shall be performed on each compacted layer of low permeability cover material. A minimum of one test for every 2,500 square feet of compacted material shall be performed.

**PART 4 MEASUREMENT AND PAYMENT**

4.01 **BACKFILL AND COMPACTION OF FINAL LANDFILL COVER SOILS**

A. **Measurement**

Materials that are placed, backfilled, and compacted, including final landfill cover soil layers will be measured for payment by the in-place cubic yard, and quantities determined by the average end area method. The basis for the measurement will be the original cross

sections taken of the landfill cells, and the final cross sections taken after backfilling and compaction of the cover soil layers.

**B. Payment**

Payment for placing, backfilling, and compacting soil materials for final landfill cover soil layers will be made at the in-place cubic yard price for bid item "Low permeability cover soil placement and compaction" and "Topsoil placement." Price and payment shall constitute full compensation for furnishing all plant, labor, equipment, and material, and performing all operations necessary for transporting, backfilling, compacting, and all incidental costs thereto. The price and payment for "Low permeability cover soil placement and compaction" shall also include constitute full compensation for excavating the low permeability material from the on-site borrow source area and transporting the material to the landfill cell area.

**4.02 ALL OTHER BACKFILL AND COMPACTION WORK**

- A.** No separate measurement and payment will be made for all work specified in this Section for backfill and compaction work other than the backfill and compaction of the infiltration layer cover soil and the placement of topsoil cover soil. All work specified in this Section except the placement and compaction of the final landfill cover soil layers will be considered incidental to the work specified in other sections.

**END OF SECTION**

## SECTION 02231

### EARTHEN/GRANULAR MATERIALS

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. This Section includes the requirements for earthen or granular materials. Uses of these materials is in other sections.

##### 1.02 RELATED WORK

- A. Section 01300 Submittals
- B. Section 02110 Clearing, Grubbing, and Stripping
- C. Section 02200 Earthwork – General
- D. Section 02210 Site Grading
- F. Section 02223 Backfilling and Compaction
- G. Section 02935 Site Surface Revegetation

##### 1.03 REFERENCES

- A. Montana Department of Transportation (MDOT). *Standard Specifications for Road and Bridge Construction* (MDOTSS). 1995.
- B. Montana Public Works Standard Specifications (MPWS).
- C. The references current as of the date of bid opening shall apply.

##### 1.04 SUBMITTALS

- A. The Contractor shall submit to the CO/COTR, as provided in Section 01300 information as noted below.
  - 1. Certificates, test results, and sources for all material.

##### 1.05 MATERIAL ACCEPTANCE

- A. All tests necessary to certify that each material conforms to the specification and or certificates to locate an acceptable source of each imported material or borrow source material shall be made by the Contractor along with copies of the test results from a qualified commercial testing laboratory, shall be submitted to the CO/COTR for approval at least 30 days before the material is required for use or as specified. All material samples shall be furnished by the Contractor at the Contractor's sole expense. Samples shall be representative and be clearly marked to show the source of the material and the intended use on the project. Notify the CO/COTR at least 48 hours prior to sampling. The CO/COTR may, at the CO/COTR's option, observe the sampling procedures. No imported materials shall be delivered to the site or borrow material removed from their source and relocated to the landfill area until the proposed source and materials tests have been tentatively accepted in writing by the CO/COTR. All testing for acceptance will be performed by the Contractor and witnessed

## **PART 2 PRODUCTS**

### **2.01 UNSATISFACTORY MATERIALS**

- A. Unsatisfactory materials shall be materials that do not comply with the requirements of this Section. Unsatisfactory materials include those materials containing roots and other organic matter, trash, debris, frozen materials, and stones larger than 3 inches, and materials classified in ASTM D2487, as PT, OH, CH, and OL.

### **2.02 COMMON FILL**

- A. Common fill materials shall consist of local, on-site materials from borrow sources or from required excavation that have maximum particle size less than 6 inches, are free from excess moisture, organic matter, and debris.
- B. Common fill shall be used as daily cover soil during landfill operations.

### **2.03 STRUCTURAL FILL**

- A. Structural fill shall be crushed rock consisting of sound, durable pieces, angular in shape, and free of any foreign material, structural defects, and chemical decay. It shall conform to the following gradation limits:

<u>Sieve Size</u>	<u>Percent Finer by Weight</u>
1-inch	100
¾-inch	90
½-inch	60
¼-inch	25

### **2.04 SELECT GRANULAR MATERIAL**

- A. Select granular material shall consist of well-graded sand, gravel, crushed gravel, or crushed stone composed of hard, tough and durable particles, and shall contain not more than 10 percent by weight of material passing a No. 200 mesh sieve and no less than 95 percent by weight passing the 1-inch sieve and a uniformity coefficient between 2 and 3.5.

### **2.05 ONE-INCH MINUS GRAVEL**

- A. One-inch minus gravel shall be material screened to 1-inch minus with not more than 15 percent by weight passing the U.S. No. 200 sieve.

### **2.06 GRANULAR ROCK**

- A. Granular rock shall be well graded with a maximum size of 1½-inches and a minimum size of ¼-inch.

### **2.07 AGGREGATE SURFACE COURSE**

- A. Aggregate surface courses shall be in accordance with specifications established by

MDOTSS. Surface course shall be crushed top surfacing Type "B," Grade 2 per Section 701, Aggregates.

## 2.08 DRAINAGE MATERIAL

### A. Drainage Material

Drainage media shall be of well-graded inorganic noncalcareous material, free from organic substance and other deleterious matter with a minimum permeability ( $K_{MIN}$ ) of  $1 \times 10^{-3}$  cm/sec at 90 percent of Standard Proctor density, ASTM D698.

### B. Drainage materials shall be furnished by the Contractor and shall conform to the following gradations (ASTM C33):

<u>Standard Sieve Size</u>	<u>Percentage Passing</u>
1-inch	100
No. 4	95 - 100
No. 8	80 - 100
No. 16	50 - 85
No. 30	25 - 60
No. 50	5 - 30
No. 100	0 - 10
No. 200	0

## 2.09 TYPE 1 PIPE BEDDING

### A. Refer to MPWS Section 02221 (Trench Excavation and Backfill for Pipelines and Appurtenant Structures).

## 2.10 TYPE 2 PIPE BEDDING

### A. Refer to MPWS Section 02221.

## 2.11 TOPSOIL

### A. Clean topsoil shall conform to Montana Public Works Standard Specifications Section 02910. Topsoil shall be loose, friable, loamy soil, free of excess acid and alkali, contain not less than 2% nor more than 20% organic matter as determined by the loss on ignition of oven dried samples (Reference ASTM D-2974) method. Topsoil shall also not contain objectionable amounts of sod, hard lumps, gravel, sub-soil or other undesirable material that would form a poor seedbed. Sampling of this material will include analysis for nutrient levels, concentrations of organic matter, percent of cation exchange capacity (CEC), and soil texture. The clean topsoil will be capable of producing natural vegetation. Before topsoil is borrowed (striped), it must be determined to have supported the healthy growth of crops, grass or other desirable vegetation. The Government reserves the right to

reject any fill or topsoil it deems unacceptable for use at the site.

B. Selected topsoil obtained from stripping as specified in Section 02210 may be used provided it is properly stored and protected, and provided that ground grubbings are thoroughly mixed into the material. Topsoil shall be free from roots, sticks, hard clay, and stones that will not pass through a 1-inch square opening. Remove existing vegetation before topsoil is excavated. Segregate top 6-inches of topsoil and stockpile and shown on the Drawings for use in the landfill final cover. Provide additional imported topsoil as specified herein to accomplish the work.

C. Topsoil shall be used as the landfill final cover 6-inch seed bed layer.

#### 2.12 LANDFILL LOW PERMEABILITY LAYER COVER SOIL

A. Low permeability soil materials shall be obtained from an on site borrow source as specified in Section 02200.

B. The low permeability soils shall be used as the 18-inch infiltration layer of the final cover if the material has a permeability no greater than  $1 \times 10^{-5}$  cm/sec.

#### PART 3 EXECUTION (NOT USED)

#### PART 4 MEASUREMENT AND PAYMENT

4.01 No separate measurement and payment will be made for the work of this Section. The work specified in this Section related to earthen and granular materials will be considered incidental to work specified in other sections.

**END SECTION**

## SECTION 02270

### EROSION AND SEDIMENTATION CONTROL

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and perform all installation, maintenance, removal and area cleanup related to erosion and sedimentation control work as shown on the Drawings and as specified herein. The work shall include, but not necessarily be limited to; installation and maintenance of erosion control fences, maintenance of straw bale barriers installed in stormwater control ditches (installed during a previous construction contract), removal of accumulated sediment from sediment ponds and disposal of sediment in active landfill cell, removal of temporary devices, and final cleanup.

##### 1.02 RELATED WORK

- A. Drawing C-10
- B. Section 02200 Earthwork - General
- C. Section 02713 Stormwater Management

##### 1.03 REFERENCES

- A. Montana Department of Transportation (MDOT). *Standard Specifications for Road and Bridge Construction* (MDOTSS). 1995.
- B. Montana Public Works Standard Specifications (MPWS).
- C. The references current as of the date of bid opening shall apply.

##### 1.04 SUBMITTALS

- A. Submit, in accordance with Section 01300, within 10 days after award of Contract, technical product literature for all commercial products to be used for erosion and sedimentation control.

##### 1.05 QUALITY ASSURANCE

- A. Be responsible for the timely installation and maintenance of all sedimentation control devices necessary to prevent the movement of sediment from the construction site to off site areas or into the stream system via surface runoff or underground drainage systems. Measures in addition to those shown on the Drawings necessary to prevent the movement of sediment off site shall be installed, maintained, removed, and cleaned up at the expense of the Contractor. No additional charges to the Government will be considered.

#### PART 2 PRODUCTS

##### 2.01 MATERIALS

- A. Erosion Control Fence shall be a prefabricated commercial product made of a woven, polypropylene, ultraviolet resistant material.
- B. Straw bales shall be comprised of baled straw of oats, wheat, barley, or rye that is certified free from noxious weeds, as well as free of mold or other objectionable material.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

#### **A. Sediment Fence Installation**

1. Sediment fences shall be positioned on the down-slope side of all soil stockpiles and other locations as indicated on the Drawings and as necessary to prevent off site movement of sediment produced by construction activities as directed by the CO/COTR.
2. Dig trench approximately 6-in wide and 6-in deep along proposed fence lines.
3. Drive stakes, 8-ft on center (maximum) at back edge of trenches. Stakes shall be driven 2-ft (minimum) into ground.
4. Hang filter fabric on posts carrying to bottom of trench with about 4-in of fabric laid across bottom of trench. Stretch fabric fairly taut along fence length and maintain secure both ways.
5. Backfill trench with excavated material and tamp.
6. Install pre-fabricated silt fence according to manufacturer's instructions.

#### **B. Straw Bale Barrier Installation**

1. Straw bale barriers shall be installed at 300 foot intervals within the stormwater drainage ditches as shown on the Drawings.
2. Dig a trench approximately one-third of the bale's height, install the rows of bales and backfill the bales on the uphill side.
3. Secure each bale with a minimum of two stakes per bale.
4. Stakes shall be 2-inch by 2-inch by 3-foot long.
5. Install straw bale barrier such that the bottom of the end bales is higher than the top of the lowest center bale.

### **3.02 MAINTENANCE AND INSPECTIONS**

#### **A. Inspections**

1. Make a visual inspection of all erosion and sedimentation control devices once per week and promptly after every rainstorm. If such inspection reveals that additional measures are needed to prevent movement of sediment to offsite areas, promptly install additional devices as needed. Sediment controls in need of



maintenance shall be repaired promptly.

2. Inspect stormwater/sediment retention ponds on a weekly basis and after storm events. Remove sediment when sediment storage zone is one-half full. Dispose of sediment in active landfill cell.

**B. Device Maintenance**

**1. Sediment Fences**

- a. Remove accumulated sediment once it builds up to 1/2 of the height of the fabric.
- b. Replace damaged fabric, or patch with a 2-ft minimum overlap.
- c. Make other repairs as necessary to ensure that the fence is filtering all runoff directed to the fence.

**2. Straw Bale Barriers**

- a. Remove accumulated sediment once it builds up to 1/2 of the height of the bales.
- b. Repair or replace damaged, under-cut, or end run bales.
- c. Make other repairs as necessary to ensure that the fence is filtering all runoff in the drainage ditches.

**3.03 REMOVAL AND FINAL CLEANUP**

- A. Once the landfill has been covered and the site has been fully stabilized against erosion, remove sediment control devices and all accumulated silt. Dispose of silt and waste materials in proper manner. Regrade all areas disturbed during this process and stabilize against erosion with surfacing materials as indicated on the Drawings.

**PART 4 MEASUREMENT AND PAYMENT**

**4.01 MEASUREMENT**

- A. No separate measurement will be made for erosion and sedimentation control.

**4.02 PAYMENT**

- B. Payment for all erosion and sedimentation control will be made at the Contract lump sum price for bid item "Erosion and Sedimentation Control." Price and payment shall constitute full compensation for furnishing all plant, labor, material and equipment, and performing all operations necessary for completion of the work specified in this Section.

**END OF SECTION**

## SECTION 02618

### CULVERTS

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment, and incidentals necessary to relocate and remove culverts as shown on the Drawings and as specified herein. The type of culverts specified are corrugated metal pipe (CMP).
- B. The Contractor shall move culverts installed in run-off storm water ditches as necessary to access and exit the area of the active landfill cell.
- C. Prior to the excavation of landfill Cell M, the Contractor shall shorten Culvert "D" by 50 feet and remove culvert section and riser pipe in the sediment pond.

##### 1.02 RELATED WORK

- A. Section 01300 Submittals
- B. Section 02200 Earthwork - General
- C. Section 02713 Stormwater Management

##### 1.03 SUBMITTALS

- A. Submit to the CO/COTR, as provided in Section 01300, shop drawings showing layout and details of and method of construction and installation of the pipe.
- B. Before fabrication of the pipe is begun, submit for approval a schedule of pipe lengths for the entire job. All pipe furnished under the Contract shall be fabricated in full accordance with the AASHTO Standards.

##### 1.04 REFERENCE STANDARDS

- A. American Association of State Highways and Transportation Officials (AASHTO)
  - 1. AASHTO M36 - Interim Specification for Corrugated Steel Pipe, Metallic Coated for Sewers and Drains.
  - 2. AASHTO M246 - Standard Specifications for Steel Sheet, Metallic-Coated and Polymer Precoated for Corrugated Steel Pipe
- B. Montana Department of Transportation (MDOT). *Standard Specifications of Road and Bridge Construction*. (MDOTSS). 1995.
  - 1. Section 603 Culverts, Storm Drains, Sanitary Sewers, Stockpasses, and Underpasses
  - 2. Section 708 Concrete, Plastic, and Fiber Pipe

3. Section 709 Metal Pipe

- C. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

**PART 2 PRODUCTS**

**2.01 CORRUGATED METAL PIPE (CMP)**

- A. The corrugated metal pipe shall be dimensioned as shown on the Drawings and conforming to the requirements of MDOTSS Section 709, Metal Pipe. The pipe shall be 0.064 minimum thickness steel with 2-inch by ½-inch corrugations.
- B. The coupling bands shall meet AASHTO M36 requirements.
- C. Furnish flared end terminal sections on pipe ends with standard coupling band.
- D. All culverts shall have a 10-mil polymer coating according to AASHTO M246.

**PART 3 EXECUTION**

**3.01 HANDLING AND PROTECTION**

- A. Care shall be taken in loading, transporting, unloading, and storing the pipe to prevent injury.
- B. No pipe shall be installed that is found to be defective. If any pipes are found to be defective at the site, then the pipe shall be removed from the site and replaced by the Contractor at his/her own expense.

**3.02 INSTALLATION**

- A. The pipe shall be installed in accordance with the procedures established in MDOTSS Section 603, Culverts, Storm Drains, Sanitary Sewers, Stockpasses, and Underpasses, and the manufacturer's instructions.

**3.03 CLEANING**

- A. At the conclusion of the work, thoroughly clean all pipe by flushing with water to remove all dirt, stones, pieces of wood, or other debris.

**PART 4 MEASUREMENT AND PAYMENT**

**4.01 MEASUREMENT AND PAYMENT**

- A. No separate measurement and payment will be made for any work specified in this Section. The work specified in this Section will be considered incidental to the lump sum price for bid item "Stormwater Management" specified in Section 02713.

**END OF SECTION**

## SECTION 02713

### STORMWATER MANAGEMENT

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Supply all materials, equipment, and labor to maintain all stormwater controls as shown on the Drawings and as specified herein. Stormwater drainage ditches along the site access roads, primary, and secondary stormwater retention ponds were constructed during a previous construction contract. Stormwater management consists of controlling stormwater under two general conditions within the project area. The two general conditions are:
  - 1. Direct uncontaminated runoff (from offsite) away from the landfill cell area.
  - 2. Direct potentially contaminated runoff to an onsite primary sediment pond located within the landfill cell area. From here, stormwater will be directed into a secondary sediment pond.
  - 3. On a weekly basis, pump/clean out sediment and water from decon pad sump and dispose of materials in active landfill cell. Immediately apply daily cover soil. Under no circumstances will sump water be allowed to overflow sump pit.
- B. Provisions for directing runoff and runoff from the landfill area have been provided for in the project drawings. In the process of construction of these provisions and other portions of the project, the Contractor shall provide any additional short-term protection that may be necessary to direct stormwater of the design storm event away from the project area.
- C. The stormwater management work includes controlling stormwater within the project area. The facilities to manage these stormwaters are capable of collecting, directing and infiltrating the runoff from disturbed areas.
- D. Contractor shall provide equipment (e.g., pumps, piping, earthworking equipment) and personnel to control flows in excess of the design flows. The Contractor shall control these flows as acceptable to the CO/COTR and in accordance with approved submittals.
- E. Construct drainage ditches associated with the final landfill cover as shown on the Drawings.
- F. Prior to the excavation of landfill Cell M, the Contractor shall remove the sediment pond and shall shorten Culvert "D" by 50 feet and remove culvert section. All sediment and water shall be removed from the pond and placed in a landfill cell.

##### 1.02 RELATED WORK

- A. Section 01300 Submittals
- B. Section 02200 Earthwork - General

##### 1.03 REFERENCES

A. State of Montana Surface Water Quality Standard Stormwater Regulations

1.04 SUBMITTALS

A. The Contractor shall submit to the CO/COTR, as provided in Section 01300, information as noted below.

1. Contractor shall submit four copies of a Stormwater Management Plan that addresses the following items prior to beginning any activities on site.
  - a. Nature, locations, and capacities of proposed stormwater storage and conveyance facilities.
  - b. Operations scheme describing how stormwater will be removed from the project area.
  - c. Locations of discharge points.
  - d. Priorities and procedures for removal of stormwater from storage after the storm event.
  - e. Runon/runoff controls for diversion of runoff and for diversion of flows greater than the design storm.
  - f. Control to prevent runoff from entering or accumulating in excavations.
  - g. Personnel responsible for operation and maintenance of stormwater management facilities.
  - h. Contingency Plan for runoff in excess of the design storm.
  - i. Drawings as are necessary to show the site in various stages of construction and operation; show and describe, as a minimum, the locations and relationships of the above items and activities at not less than six stages of the project life, relatively equally distributed from start to finish.
2. Proposed Revisions to the Stormwater Management Plan prior to their implementation.

**PART 2 PRODUCTS**

2.01 GENERAL

- A. Provide all materials and equipment in suitable and adequate quantity and quality as required to accomplish the work shown on the Drawings and specified herein.

**PART 3 EXECUTION**

3.01 GENERAL

- A. Maintain all berms, drainage ditches, and stormwater retention ponds to intercept and

manage stormwater as specified herein.

1. Divert runoff from the project area and isolate and collect runoff from the project area and convey it to the stormwater retention ponds.
2. Divert runoff from entering in excavations. Allow runoff from excavation areas to infiltrate within the excavated areas or convey to the stormwater retention ponds.
3. Divert runoff from the landfill final cover to the control ditches and convey it to the stormwater ponds.

### 3.02 EXCAVATION AREAS

- A. Surface runoff flowing toward excavation areas shall be collected in shallow ditches and diverted around the perimeter of the excavation.
- B. Drainage operations shall at all times be conducted in such a manner as to preserve the natural undisturbed bearing capacity of the subgrade at the bottom of the excavation. If the subgrade becomes disturbed for any reason, the unsuitable subgrade material shall be removed and replaced with concrete, compacted select granular fill, compacted structural fill, or other approved material to restore the bearing capacity of the subgrade to its natural undisturbed condition.
- C. Drainage operations shall be conducted in a manner that does not cause loss of ground or disturbance to the pipe bedding or soil that supports overlying or adjacent structures.

### 3.03 STORMWATER HANDLING AND STORAGE

- A. Stormwater Removal - Remove all accumulated stormwater as necessary to maintain safe working conditions.
- B. Conveyance to Stormwater Retention Ponds
  1. Maintain berms and drainage ditches for conveying runoff from the excavation areas and landfill areas in which the final cover has been constructed, to storage areas. Provide and maintain sufficient conveyance capacity to accommodate peak flows from runoff areas to stormwater retention ponds during the design storm.

## PART 4 MEASUREMENT AND PAYMENT

### 4.01 MEASUREMENT

- A. No separate measurement will be made for stormwater management.

### 4.02 PAYMENT

- B. Payment for all stormwater management will be made at the Contract lump sum price for bid item "Stormwater Management." Price and payment shall constitute full compensation for furnishing all plant, labor, material and equipment, and performing all operations necessary for completion of the work specified in this Section.

**END OF SECTION**

## SECTION 02935

### REVEGETATION

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. The Contractor shall furnish all labor, materials, equipment, tools, supervision, and incidentals necessary for the final cover revegetation of the Libby, Montana Class IV asbestos landfill as specified herein.
  - 1. The Contractor shall construct the final cover with materials specified herein to the grade and in the locations shown on the Drawings.
  - 2. The Contractor shall place, establish, and maintain seed on stormwater drainage ditches.
  - 3. The Contractor shall place, establish, and maintain seed on landfill final cover and other areas disturbed by construction activities.
  - 4. The Contractor shall provide operation and maintenance (O&M) of revegetated areas as specified herein.

##### 1.02 RELATED WORK

- A. Section 01300 Submittals
- B. Section 02223 Backfilling and Compaction
- C. Section 02231 Earthen/Granular Materials

##### 1.03 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced; publications are referred to in the text by basic designation only.
  - 1. Agricultural Marketing Service (AMS)
    - a. AMS-01 (Aug 95) Federal Seed Act Regulations Part 201
  - 2. American Nursery and Landscape Association (ANLA)
    - a. ANLA ANSI/ (1996) Nursery Stock
    - b. ANLA Z60.1
  - 3. American National Standards Institute (ANSI)
    - a. ANSI A300 (1995) Tree Care Operations - Trees, Shrubs, and other Woody Plant Maintenance
  - 4. State of Montana

1.04 SUBMITTALS

A. The following shall be submitted by the Contractor to the CO/COTR as requested.

1. **Manufacturer's Literature**  
Manufacturer's literature discussing physical and chemical characteristics, application, and installation instructions for equipment, surface erosion control material, and chemical treatment material.
2. **Equipment List**  
A list of proposed pesticide and herbicide application, seeding, planting, and mulching equipment to be used in performance of seeding operation, including descriptive data and calibration tests.
3. **Delivery Schedule**  
A delivery schedule shall be provided at least 10 days prior to the intended date of the first delivery.
4. **Application of Herbicides**  
Herbicide treatment plan with proposed sequence of treatment work. The trade name, chemical composition, formulation, concentration, application rate of active ingredients and method of application for all materials; and the name and state license number of the state certified applicator shall be included.
5. **Field Testing Reports**  
Results of any field tests.
6. **Maintenance Report**  
Written record of maintenance work performed.
7. **Seed Establishment Period**  
Written calendar time period for the seed establishment period. When there is more than one seed establishment period, the boundaries of the seeded area covered for each period shall be described.
8. **Certificates of compliance certifying that materials meet the requirements specified, prior to the delivery of materials. Certified copies of the reports for the following materials shall be included.**
  - a. **Topsoil (Topsoil)**  
Topsoil characteristics for particle size, coarse fragment content, pH, organic matter content, textural class, and soluble salts shall meet the requirements of Section 02231.
  - b. **Seed**  
Seed origin, classification, botanical name, common name, percent pure live seed, minimum percent germination and hard seed, maximum percent weed seed content, and date tested. The Contractor shall supply the CO/COTR with all seed bag tags and a certification from the supplier stating that the seed complies with applicable local, State, and Federal regulations.



- c. Fertilizer  
Manufacturer's information.
- d. Mulch  
Composition and source.
- e. Herbicide  
Registered name.
- f. Quantity Check  
Bag count or bulk weight measurements of material used compared with area covered, to verify the application rate and quantity installed.

#### 1.05 QUALITY ASSURANCE

- A. Quality assurance will be achieved through continual oversight of the Contractor's work by the CO/COTR and using the specifications provided herein.

#### 1.06 SOURCE INSPECTION

- A. The source of delivered topsoil material (if used) shall be subject to inspection.

#### 1.07 DELIVERY, INSPECTION, STORAGE, AND HANDLING

- A. Delivery  
A delivery schedule shall be provided at least 10 calendar days prior to the first day of delivery.
  - 1. Delivered Topsoil  
Prior to the delivery of any topsoil, its availability shall be verified. A soil test shall be provided for topsoil delivered to the site. Topsoil containing any of the following materials shall be rejected: slag, cinders, stones, lumps of soil, sticks, roots, trash or other material over a minimum 1½ -inch diameter; and topsoil that contains viable plants and plant parts. Unacceptable materials shall be removed from the job site.
  - 2. Herbicides  
These materials shall be delivered to the site in the original, unopened containers bearing legible labels indicating the EPA registration number and the manufacturer's registered uses.
- B. Seed Inspection  
Seed shall be inspected upon arrival at the job site for conformity to species and quality. Seed that is wet, moldy, or bears a test date five months or older, shall be rejected.
- C. Storage  
Materials shall be stored in designated areas. Seed and fertilizer shall be stored in cool, dry locations away from contaminants. Chemical treatment material shall be stored according to manufacturer's instructions and shall not be stored with seeding operation materials.
- D. Handling

Except for bulk deliveries, materials shall not be dropped or dumped from vehicles. Plant material shall not be injured during handling. Cracking or breaking the earth ball of balled and burlapped plant material shall be avoided.

- E. Time Limitation  
Hydroseeding time limitation for holding seed in the slurry shall be a maximum 24 hours.

## **PART 2 PRODUCTS**

### **2.01 GENERAL**

- A. The Contractor shall provide all materials and equipment in suitable and adequate quantity and quality as required to accomplish the work shown on the Drawings and specified herein.

### **2.02 TOPSOIL**

- A. Topsoil shall meet requirements and conditions set forth in Section 02231. These materials are as follows:
  - 1. Topsoil - Clean topsoil shall conform to Montana Public Works Standard Specifications Section 02910. Topsoil shall be loose, friable, loamy soil, free of excess acid and alkali, contain not less than 2% nor more than 20% organic matter as determined by the loss on ignition of oven dried samples (Reference ASTM D-2974) method. Topsoil shall also not contain objectionable amounts of sod, hard lumps, gravel, sub-soil or other undesirable material that would form a poor seedbed. Sampling of this material will include analysis for nutrient levels, concentrations of organic matter, percent of cation exchange capacity (CEC), and soil texture. The clean topsoil will be capable of producing natural vegetation. Before topsoil is borrowed (striped), it must be determined to have supported the healthy growth of crops, grass or other desirable vegetation. The Government reserves the right to reject any fill or topsoil it deems unacceptable for use at the site.

### **2.03 SEED**

- A. Seed Classification  
State-certified seed of the latest season's crop shall be provided in original sealed packages bearing the producer's guaranteed analysis for percentages of mixture, purity, germination, hard seed, weed seed content, and inert material. Labels shall be in conformance with AMS-01 and applicable state seed laws. The following must appear on the label:
  - 1. Lot number or other distinguishing mark.
  - 2. The common name, genus, species, and subspecies, when applicable, including the name of each kind of seed present in excess of 5 percent. When two or more kinds of seed are named on the label, the label shall specify the percentage of each. When only one kind of seed is present in excess of 5 percent and no variety name or type designation is shown, the percentage must apply to seed of the kind named. If the name of the variety is given, the name may be associated with the seed of the kind named. The percentage in this case may be shown as "pure seed" and must apply only to seed of the variety named.

3. State or county of origin.
4. The approximate percentage of viable seed, together with the date of the test. When labeling mixtures, the percentage of viability of each kind shall be stated.
5. The approximate percentage by weight of pure seed, meaning the freedom of seed from inert matter and from other seeds.
6. The approximate percentage by weight of sand, dirt, broken seeds, sticks, chaff, and other inert matter.
7. The approximate total percentage by weight of other seeds.
8. The name and approximate number of each kind of species of prohibited and restricted noxious weed seeds occurring per pound of seed.
9. The full name and address of the person, firm, or corporation selling the seed.

**B. Seed Species and Mixtures**

Seed species shall be proportioned by weight as shown in Table 1.

**Table 1 Revegetation Seed Mixture**

Plant Species		Grass Composition (%)	Seeding Rates (Pounds Pure Live Seed per Acre)	
Botanical Name	Common Name		Drill Seeding	Broadcast or Hydroseeding
<i>Festuca ovina</i> , var. Covar	sheep fescue	10	1.2	2.4
<i>Bromus marginatus</i> , var. Bromar	mountain brome	25	3.0	6.0
<i>Phleum alpinum</i>	alpine timothy	15	1.8	3.6
<i>Thinopyrum intermedium</i>	intermediate wheatgrass	5	0.6	1.2
<i>Elymus lanceolatus</i>	streambank wheatgrass	20	2.4	4.8
<i>Elymus Canadensis</i>	Canada wildrye	10	1.2	2.4
<i>Elymus trachycaulus</i>	slender wheatgrass	5	0.6	1.2
<i>Pseudoroegneria spicata</i>	bluebunch wheatgrass	10	1.2	2.4
<b>Total Grasses</b>		100	12	24
<i>Astragalus cicer</i>	milkvetch	NA	1.5	3.0
<i>Lotus corniculatus</i>	birdsfoot trefoil	NA	1.5	3.0
<b>Total Herbaceous Perennials</b>		NA	15.0	30.0
<i>Secale cereale</i>	cereal rye	NA	3.0	6.0

**C. Quality**

1. As listed in the State of Montana regulations, seed shall contain no "PROHIBITED" noxious weed seed. The seed shall contain no "RESTRICTED" noxious weed seed in excess of the maximum numbers per pound as specified by the State of Montana or as specified by the appropriate county Weed Board, whichever is more stringent.
2. The number of seeds allowed per pound, for all other noxious weed seeds shown on the State of Montana "restricted list" shall be 0.
3. All seed shall be a standard grade adapted to Montana conditions. Seed which has become wet, moldy, or otherwise damaged shall be rejected.

- D. Seed Mixing  
Seed shall be delivered pre-mixed to the site to the extent practicable. If seed mixing on site is required, it shall be done in the presence of the CO/COTR.
- E. Substitutions  
Substitutions will not be allowed without written request to and approval from the CO/COTR.

#### 2.04 SOIL AMENDMENTS

- A. General  
Based on the specifications for topsoil (identified above), the need for soil amendments, such as pH adjusters or additional organic matter, is not anticipated.
- B. Fertilizer  
Fertilizer shall be controlled release commercial grade, free flowing, and uniform in composition. The nutrient ratio shall be 34 percent nitrogen, 52 percent phosphorus, and 60 percent potassium. The fertilizer shall be derived from sulfur coated urea, urea formaldehyde, plastic or polymer coated pills, or isobutylenediurea (IBDU). Fertilizer shall be balanced with the inclusion of trace minerals and micro-nutrients. The fertilizer shall be uniform in composition, shall be in good condition for application by suitable equipment, and shall be labeled with the manufacturer's guaranteed analysis as governed by applicable State of Montana fertilizer laws. The Contractor shall apply fertilizer at a rate of 150 pounds per acre.

#### 2.05 MULCH

- A. Mulch shall be free from weeds, mold, and other deleterious materials. Mulch materials shall be native to the region and applied at a rate of 2 tons per acre.
- B. Straw mulch shall be stalks from oats, wheat, rye, barley, or rice, furnished in air-dry condition and with a consistency for placing with commercial mulch-blowing equipment.
- C. Hydromulch may consist of wood cellulose fiber, paper fiber, or recycled paper and must be free of weeds, mold, and other deleterious materials. Manufacturer's recommendations must be followed for mixing and application.

#### 2.06 WATER

- A. Water shall be the responsibility of the Contractor, unless otherwise noted. Water shall not contain elements or compounds toxic to plant life.

#### 2.07 HERBICIDE

- A. Herbicides shall be U. S. Environmental Protection Agency (EPA) registered and approved.

#### 2.08 SURFACE EROSION CONTROL MATERIAL

- A. Surface erosion control material and implementation shall conform to the specifications provided on the Drawings.

## **PART 3 EXECUTION**

### **3.01 TOPSOIL PLACEMENT**

- A.** On areas to receive topsoil, the subgrade soil (infiltration layer soil as specified in Section 02231) shall be scarified to a 2-inch depth to enable the topsoil to bond with the subgrade and to allow root penetration.
- B.** At least 6 inches of topsoil, meeting the requirements of Section 02231 shall be placed uncompacted to the grade and areal extent shown on the Drawings. Seeding shall not begin until the areas are brought to finished grade.

### **3.02 FINISHED SOIL SURFACE**

- A.** The finished soil surface shall be reasonably smooth, uncompacted, and free from major irregular surface changes. The degree of finish shall be that ordinarily obtainable from dozer operations, except as otherwise specified. Any ditches and gutters shall be finished to permit adequate drainage.
- B.** Newly graded areas shall be protected from traffic and from erosion, and any settlement or washing away that may occur from any cause, prior to acceptance, shall be repaired and grades reestablished to the required elevations and slopes. All work shall be conducted in accordance with the environmental requirements of the Contract, which includes State of Montana best management practices.

### **3.03 SEED BED PREPARATION AND CONDITION**

- A.** **Finished Grade and Topsoil**  
The Contractor shall verify that finished grades have been completed as indicated on the Drawings and in accordance with Paragraphs 3.1 and 3.2 herein, prior to the commencement of the seeding operation.
- B.** **Tillage Depth and Slope Steepness**  
Topsoil on slopes up to a maximum 2.5-horizontal-to-1-vertical shall be tilled to approximately 4-inch in depth. Tilling shall be done on the contour to help reduce overland surface water flow and erosion. Steeper slopes shall be left smooth to accept protective soil matting. Drainage patterns shall be maintained as indicated on the Drawings. Fertilizer may be applied during this procedure.
- C.** **Seedbed Condition**  
The CO/COTR shall confirm that the seedbed surface, prior to beginning the seeding, is not excessively dry, wet, snow-covered, or frozen, and that the seedbed surface is reasonably free of large lumps, clods, and impervious crusts of topsoil. The seedbed surface, to a depth of approximately 4 inches, shall not be so tightly compacted that seed cannot begin growth. The objective for the seedbed preparation step is to use standard agricultural equipment to create a moderately rough soil surface that is easily drillable and will be conducive to seed germination and seedling emergence.

### **3.04 SEEDING TIME AND EQUIPMENT CALIBRATION**

- A.** **Seeding Time**

Seeding shall be permitted from October 15 through May 20, providing the ground surface is not frozen. The Contractor shall obtain permission from the CO/COTR prior to beginning seeding to ensure that topsoil placement and seedbed preparation meet the specifications described herein and on the Drawings.

B. Equipment Calibration

Calibration tests shall be conducted on the seeding equipment immediately prior to the beginning the seeding operations. These tests shall confirm that the equipment is operating within the manufacturer's specifications and will meet the specified seeding rate criteria provided herein. The equipment shall be calibrated a minimum of once every day during the operation. The calibration test results shall be immediately provided to the CO/COTR.

3.05 SEEDING AND MULCHING

A. General Seeding Conditions

Prior to seeding, any previously prepared surface compacted or damaged shall be reworked to meet the requirements herein. No seeding will take place when the wind velocity prevents uniform seed distribution; seeding procedure shall ensure even coverage. Seeding method shall be approved by the CO/COTR. Gravity feed applicators, which drop seed directly from a hopper onto the prepared soil, shall not be used because of the difficulty in achieving even coverage; unless otherwise approved by the CO/COTR. In general, drill seeding will be accomplished on slopes less than 2.5-horizontal-to-1-vertical steepness; hydroseeding shall be used on steeper slopes.

1. Drill Seeding

Seed shall be uniformly drilled to a maximum 1/2-inch depth and at the rate specified in Table-1 using equipment having drills a maximum 7 inches apart. Row markers shall be used with the drill seeder. Half the total rate of seed application shall be drilled in one direction, with the remainder of the seed rate drilled at 90 degrees from the first direction. The drilling equipment shall be maintained with greater than half full seed boxes during the seeding operations.

2. Hydroseeding

Seed shall be added to water and thoroughly mixed to meet the rates specified (hydromulch shall not be mixed with the seed). The time period for the seed to be held in the slurry shall be a maximum 24 hours. Slurry shall be uniformly applied under pressure over the entire area. The hydroseeded area shall not be rolled.

3. Rolling

The entire drill seeded area shall be firmed with a roller not exceeding 90 pounds per foot roller width. Slopes over a maximum 2.5-horizontal-to-1 vertical shall not be rolled. Areas seeded with a drill equipped with rollers shall not be rolled separately. Hydroseeded areas shall not be rolled.

B. Mulching

1. Straw Mulch

Straw mulch shall be spread uniformly at the rate of 2 tons per acre. Mulch shall be spread by hand, blower-type mulch spreader, or another approved method. Mulching shall be started on the windward side of relatively flat areas or on the upper part of steep slopes, and continued uniformly until the area is covered. The mulch shall not be bunched or clumped. Sunlight shall not be completely excluded from penetrating to the ground surface. All areas installed with seed

shall be mulched on the same day as the seeding. Mulch shall be anchored immediately following spreading.

2. Mechanical Anchor

Mechanical anchor shall be a V-type-wheel land packer, a scalloped-disk land packer designed to force mulch into the soil surface, or other suitable equipment.

3. Hydromulch

Wood cellulose fiber, paper fiber, or recycled paper may be applied as part of the hydroseeding operation. The mulch shall be mixed and applied in accordance with the manufacturer's recommendations. Hydromulch **shall not** be applied to the seed bed simultaneously with the seed; mulch must be applied in a second application overtop the seed.

3.06 SURFACE EROSION CONTROL

- A. Where indicated or as directed by the CO/COTR, surface erosion control material shall be installed in accordance with manufacturer's instructions. Placement of the material shall be accomplished without damage to installed material or without deviation to finished grade.

3.07 QUANTITY CHECK

- A. For materials provided in bags, the empty bags shall be retained for recording the amount used. For materials provided in bulk, the weight certificates shall be retained as a record of the amount used. The amount of material used shall be compared with the total area covered to determine the rate of application used. Differences between the quantity applied and the quantity specified shall be adjusted as directed.

3.08 RESTORATION AND CLEANUP

- A. Restoration  
Existing turf areas, pavements, and facilities that have been damaged from the seeding operation shall be restored to original condition at Contractor's expense.
- B. Cleanup  
Excess and waste material shall be removed from the seeded and planted areas and shall be disposed offsite in accordance with the general construction contract for this site.
- C. Reclamation of Temporary Access Roads and Disturbed Areas  
Temporary access road removed and other areas disturbed by construction activities shall be reclaimed using the seed mixture and the implementation and maintenance specifications provided herein.

3.09 PROTECTION OF INSTALLED AREAS

- A. Immediately upon completion of the seeding operation in an area, the area shall be protected against traffic or other use by erecting barricades and providing signage as required, or as directed by the CO/COTR.

3.10 SEED ESTABLISHMENT PERIOD

- A. Definition and Goal

The seed establishment period is defined as one full growing season after seeding. The goal is to obtain a robust stand of perennial, non-weedy, herbaceous vegetation by the end of the establishment period that is capable of stabilizing the topsoil against erosion. Written calendar time period shall be furnished for the seed establishment period. If there is more than 1 seed establishment period, the boundaries of the seeded area covered for each period shall be described and delineated on the site map and made known to the CO/COTR.

B. Seeding Success/Failure

The success of the seeding(s) will be assessed beginning at the germination stage when grass species are approximately 1-inch in height and shall continue monthly during the establishment period. A satisfactory stand of vegetation shall have a minimum of 10 grass seedlings per square foot. Areas exceeding 50 ft<sup>2</sup> that have less than 10 grass seedlings per square foot shall be re-seeded by hand. In addition, the entire site must be re-seeded if more than 10% of the seeded area fails to meet the above criteria. In this event, the CO/COTR must be notified immediately and re-seeding shall not be initiated until the probable cause of the seeding failure is ascertain and written permission is provided by a CO/COTR.

C. Maintenance During Establishment Period

Maintenance of the seeded areas shall include eradicating weeds, insects, and diseases; protecting embankments and ditches from surface erosion; maintaining erosion control materials and mulch; protecting installed areas from traffic; mowing; watering; and post-seeding fertilization.

1. Weed Control

The reclaimed areas shall be inspected for weeds each month during the establishment period. Weeds are defined as all plants considered by the state and county noxious or undesirable weed species. Noxious weeds are those regulated by law or those that are difficult to control. In general, noxious weeds are non-native plants that compete with desirable plants for nutrients, water, and/or space. Areas containing abundant weeds shall be hand-sprayed with a broadleaf herbicide. Only those areas containing weeds shall be sprayed (i.e., the entire reclaimed areas shall not be blanket sprayed). Spraying shall be completed in this manner that ensures the complete protection of the seeded forbs and the planted shrubs and trees. Herbicides shall not be applied if wind could carry the chemicals to the planted shrubs and trees. Herbicides shall be applied by a licensed certified applicator.

2. Post-Seeding Fertilization

If deemed appropriate by the on-site CO/COTR, fertilizer shall be applied to the site at the rate of 150 pounds per acre. The application shall be timed prior to the advent of winter dormancy (i.e., just prior to the end of the first full growing season).

3. Repair or Reinstall

Unsatisfactory stand of grass plants and mulch shall be repaired or reinstalled and eroded areas shall be repaired as described herein.

4. Maintenance Record

A record of each site visit shall be furnished to the CO/COTR describing the maintenance work performed, areas repaired or reinstalled; and diagnosis for unsatisfactory stand of grass plants.



### 3.11 FINAL ACCEPTANCE

#### A. Preliminary Inspection

Prior to the completion, a preliminary inspection shall be held by the CO/COTR to determine the acceptability of the seeded area and plant materials based on the specifications provided herein. Time for the inspection shall be established in writing. An unacceptable stand of grass or plant material shall be repaired as soon as conditions permit.

#### B. Final Inspection

A final inspection shall be held by the CO/COTR to determine that deficiencies noted in the preliminary inspection have been corrected. Time for the inspection shall be established in writing.

### 3.12 LONG-TERM MAINTENANCE OF ESTABLISHED SEED

#### A. The Contractor shall conduct maintenance of seed for a period of one year after the establishment periods (i.e., at the end of the second full growing season).

#### B. Maintenance of Established Seed

Maintenance of vegetation established from seed shall include eradicating weeds, insects and diseases; protecting embankments and ditches from surface erosion; maintaining erosion control materials and mulch; protecting installed areas from traffic; mowing; watering; and fertilization in accordance with the specifications provided herein.

#### C. Maintenance Record

The Contractor shall record each site visit during the long-term maintenance period, describing the maintenance work performed, areas repaired or reinstalled, and diagnosis for unsatisfactory stands of grass and make this information available to a CO/COTR.

## PART 4 MEASUREMENT AND PAYMENT

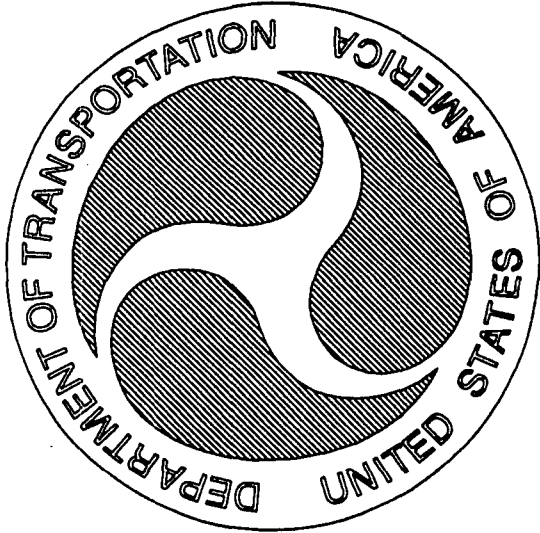
### 4.01 MEASUREMENT

#### A. Landfill revegetation will be measured for payment by the acre. The basis for the measurement will be the surveyed area revegetated.

### 4.02 PAYMENT

#### A. Payment for revegetation will be made at the price per acre for bid item "Revegetation." Price and payment shall constitute full compensation for furnishing all plant, labor, material and equipment, and performing all operations necessary for completion of the work specified in this Section.

**END OF SECTION**



U.S. DEPARTMENT OF TRANSPORTATION  
RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION  
JOHN A. VOLPE NATIONAL TRANSPORTATION SYSTEMS CENTER  
ENVIRONMENTAL ENGINEERING DIVISION, DTS-33  
55 BROADWAY, KENDALL SQUARE  
CAMBRIDGE, MASSACHUSETTS 02142

# CLASS IV LANDFILL (PHASE II - LANDFILL OPERATIONS)

LINCOLN COUNTY, MONTANA  
MAY, 2002

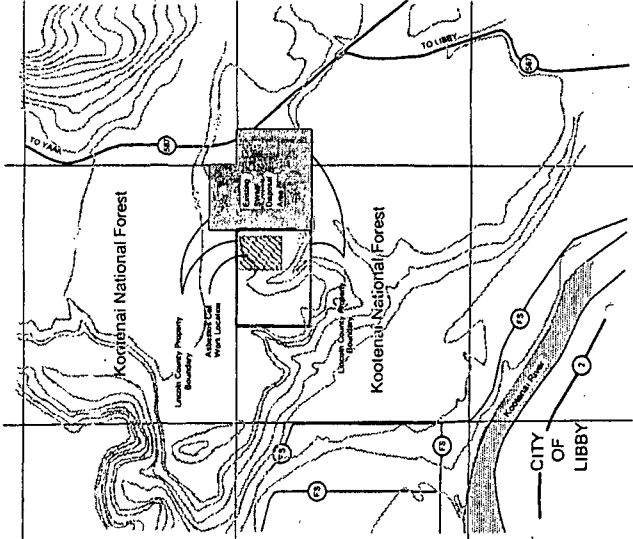
## LIST OF DRAWINGS

SHEET NO.	TITLE
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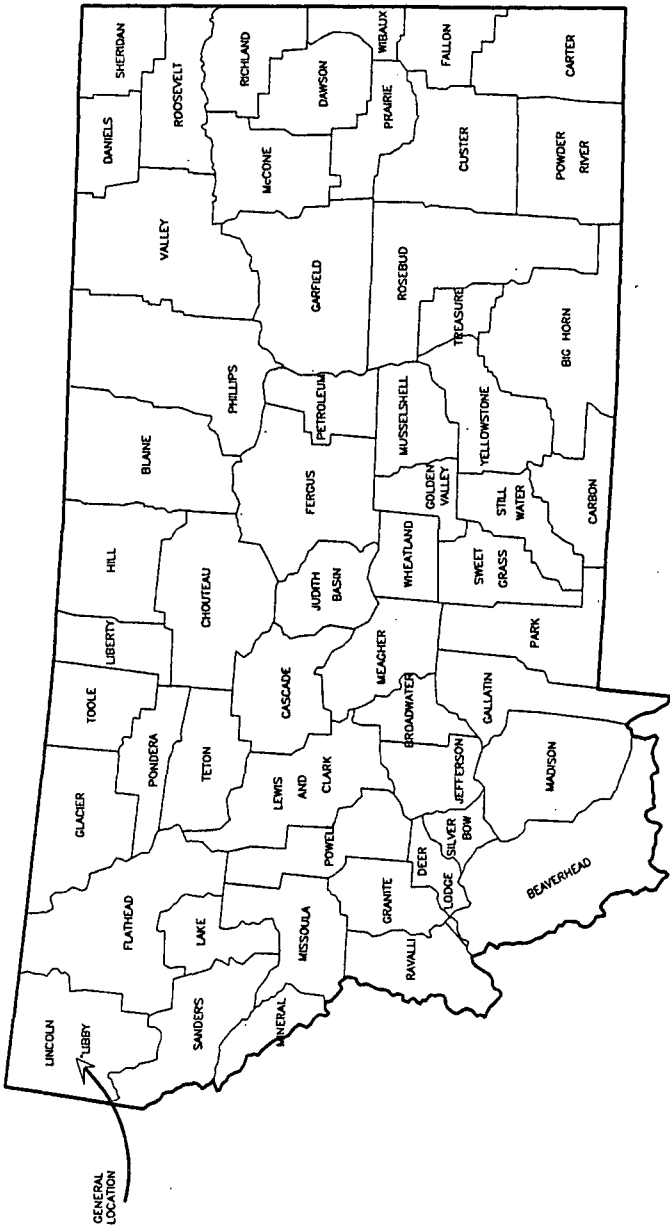
G1	COVER SHEET
C1	SITE PLAN
C2	SITE PLAN AND WORK THIS CONTRACT
C3	CELL EXCAVATION PLAN AND PROFILES
C4	CELL BACKFILL PLAN AND PROFILES
C5	CELL FINAL COVER PLAN AND PROFILES
C6	DETAILS
C7	ASBESTOS DISPOSAL OPERATIONS PLAN

## NOTES:

1. PORTIONS OF THIS CONTRACT REQUIRE HANDLING, PLACEMENT, COMPACTION, AND EXPOSURE TO ASBESTOS CONTAMINATED MATERIALS (ACM). PERSONNEL WHO ARE EMPLOYED BY CONTRACTOR AND WHO MAY HAVE AN EXPOSURE TO ACM MUST BE TRAINED IN ACCORDANCE WITH OSHA STANDARDS. AN EXCLUSION ZONE WILL APPLY TO THOSE TASKS THAT HAVE A LIKELY HOOD OF EXPOSURE AND ARE SHOWN ON THE DRAWINGS.
2. PHASE I DRAWINGS ARE INCLUDED AS AN APPENDIX TO THE PHASE II BID DOCUMENT. PHASE I WORK WAS COMPLETED PREVIOUSLY BY ANOTHER CONTRACTOR.



VICINITY PLAN  
NTS



MONTANA INDEX MAP  
NTS

CONTRACTOR SUPPORT PROVIDED BY:

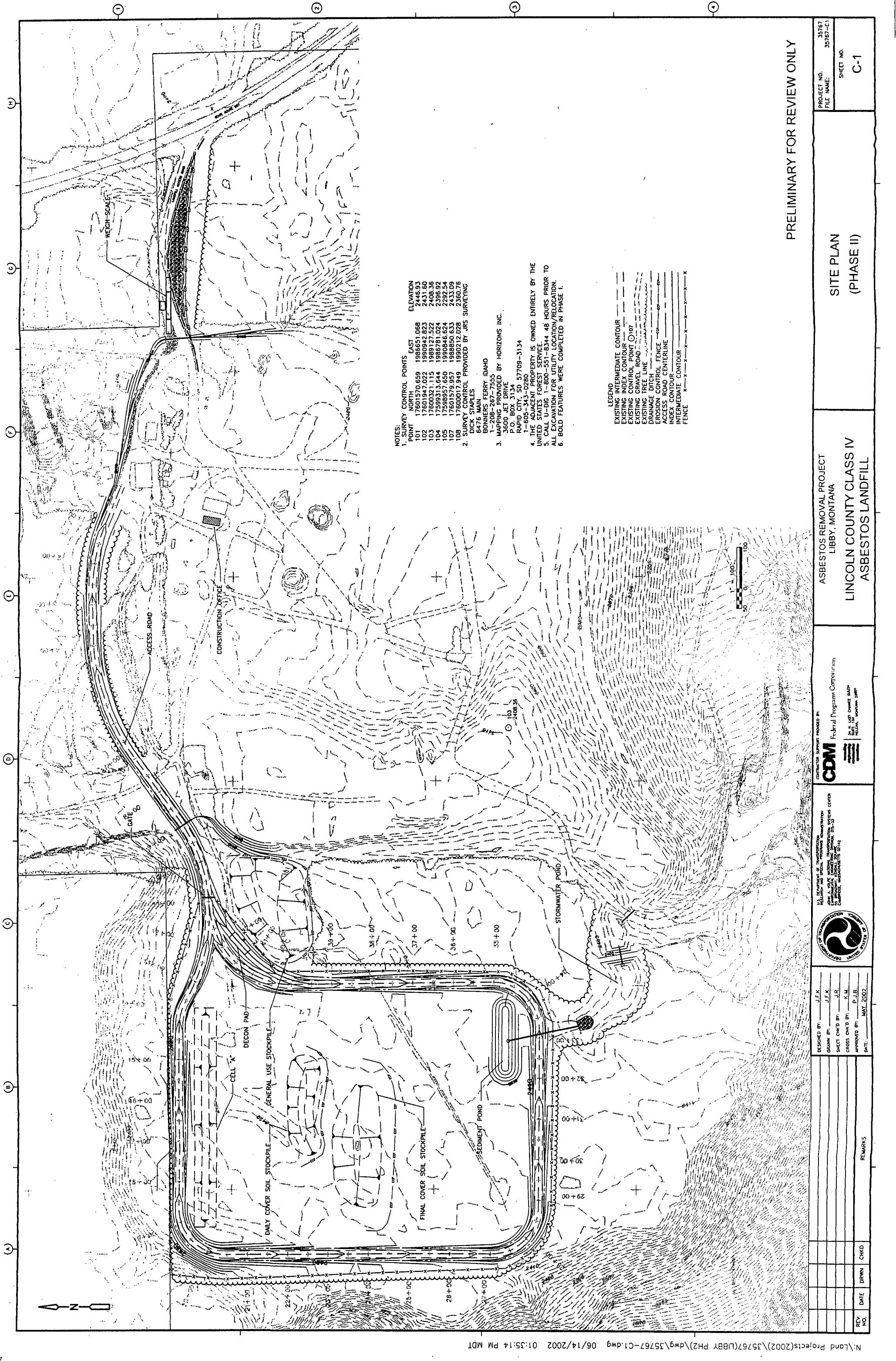


Federal Programs Corporation

consulting  
engineering  
construction  
operations

34 N. LAST CHANCE GULCH  
SUITE 104  
HELENA, MONTANA 59601  
1-406-449-2121

PRELIMINARY FOR REVIEW ONLY



NOTES:  
1. SURVEY CONTROL POINTS EAST ELEVATION  
POINT NORTH  
101 17601570.659 1986651.068 2448.93  
102 17601947.022 1980542.823 2431.60  
103 17600321.115 1989127.522 2408.36  
104 17599313.644 1986781.024 2396.92  
105 17598957.650 1990846.624 2292.54  
107 17601579.957 1988850.633 2433.09  
108 17600017.949 1990212.028 2360.76  
2. SURVEY CONTROL PROVIDED BY JRS SURVEYING  
DICK STAPLES  
6476 MAIN  
BONNERS FERRY IDAHO  
83608-277555  
3. MAPS PROVIDED BY HORIZONS INC.  
3600 BET DRIVE  
P.O. BOX 3134  
RAPID CITY, SD 57709-3134  
1-605-343-0280  
4. THE ADJACENT PROPERTY IS OWNED ENTIRELY BY THE  
UNITED STATES FOREST SERVICE.  
5. CALL U-DIG 1-800-551-8344 48 HOURS PRIOR TO  
ALL EXCAVATION FOR UTILITY LOCATION/RELOCATION.  
6. BOLD FEATURES WERE COMPLETED IN PHASE I.

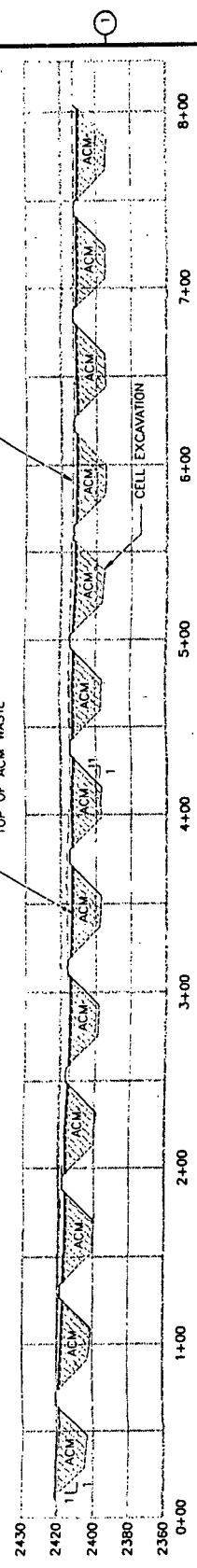
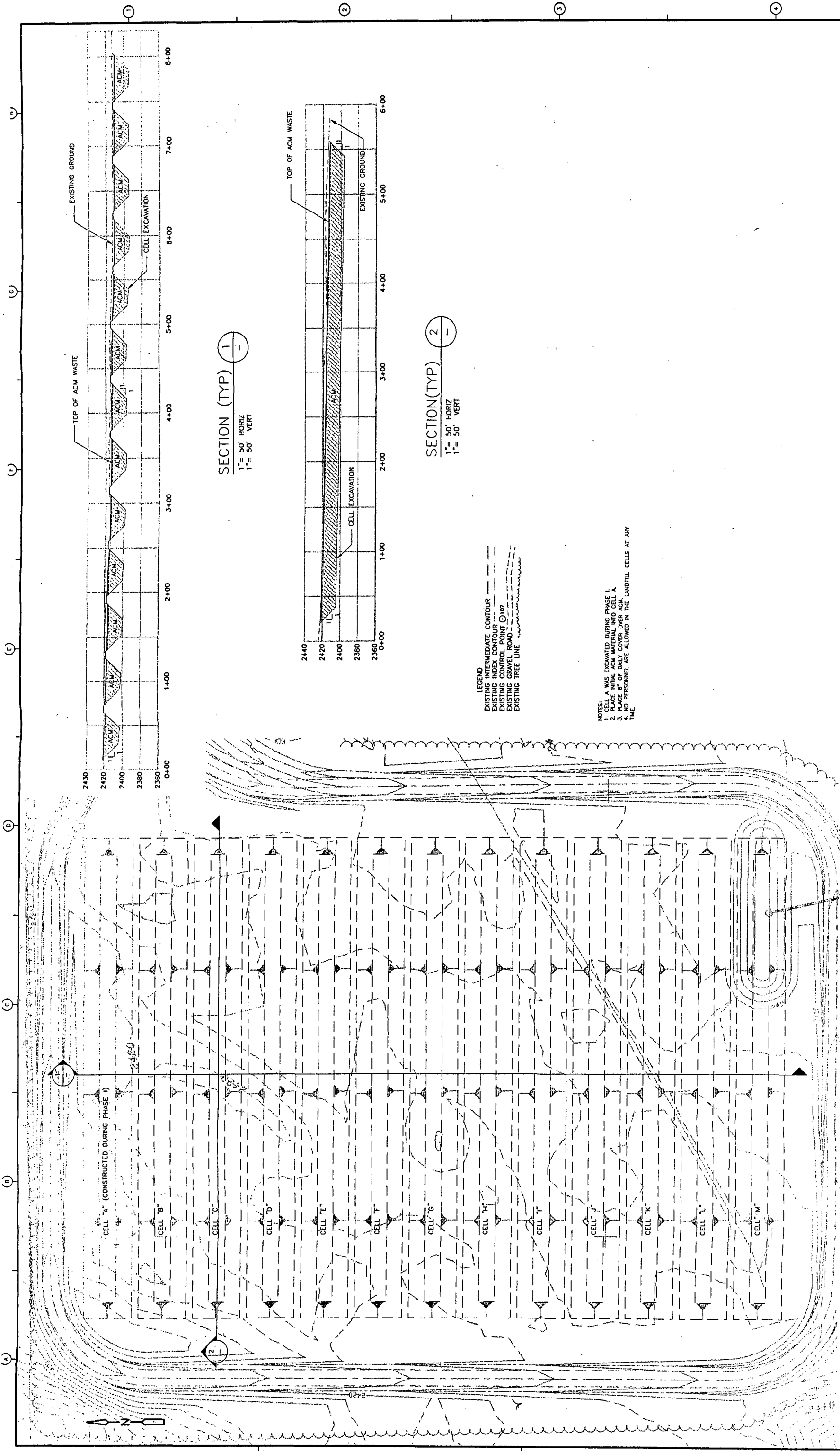
LEGEND  
EXISTING INTERMEDIATE CONTOUR  
EXISTING INDEX CONTOUR  
EXISTING GRAVEL ROAD  
EXISTING FENCE  
EROSION CONTROL FENCE  
ACCESS ROAD CENTERLINE  
INDEX CONTOUR  
INTERMEDIATE CONTOUR  
FENCE

PRELIMINARY FOR REVIEW ONLY

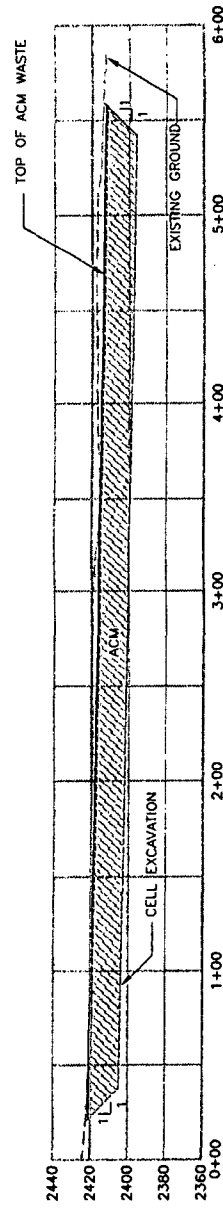
DESIGNED BY: J.F.K.		DRAWN BY: J.F.K.		SHEET CHECKED BY: J.R.		CROSS CHECKED BY: K.M.		APPROVED BY: P.J.B.		DATE: MAY 2002	
REMARKS											
CDM Federal Program Corporation U.S. DEPARTMENT OF TRANSPORTATION CONSTRUCTION SUPPORT PROVIDED BY: LIBBY, MONTANA LINCOLN COUNTY CLASS IV ASBESTOS LANDFILL											
ASBESTOS REMOVAL PROJECT LIBBY, MONTANA LINCOLN COUNTY CLASS IV ASBESTOS LANDFILL											
SITE PLAN (PHASE II)											
PROJECT NO. 35767 FILE NAME: 35767-C1 SHEET NO. C-1											







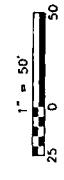
SECTION (TYP) 1  
1" = 50' HORIZ  
1" = 50' VERT



SECTION (TYP) 2  
1" = 50' HORIZ  
1" = 50' VERT

- LEGEND
- EXISTING INTERMEDIATE CONTOUR
  - EXISTING INDEX CONTOUR
  - EXISTING CONTROL POINT
  - EXISTING GRAVEL ROAD
  - EXISTING TREE LINE

- NOTES:
- CELL A WAS EXCAVATED DURING PHASE I.
  - PLACE INITIAL ACM MATERIAL INTO CELL A.
  - PLACE 6" OF DAILY COVER OVER ACM.
  - NO PERSONNEL ARE ALLOWED IN THE LANDFILL CELLS AT ANY TIME.

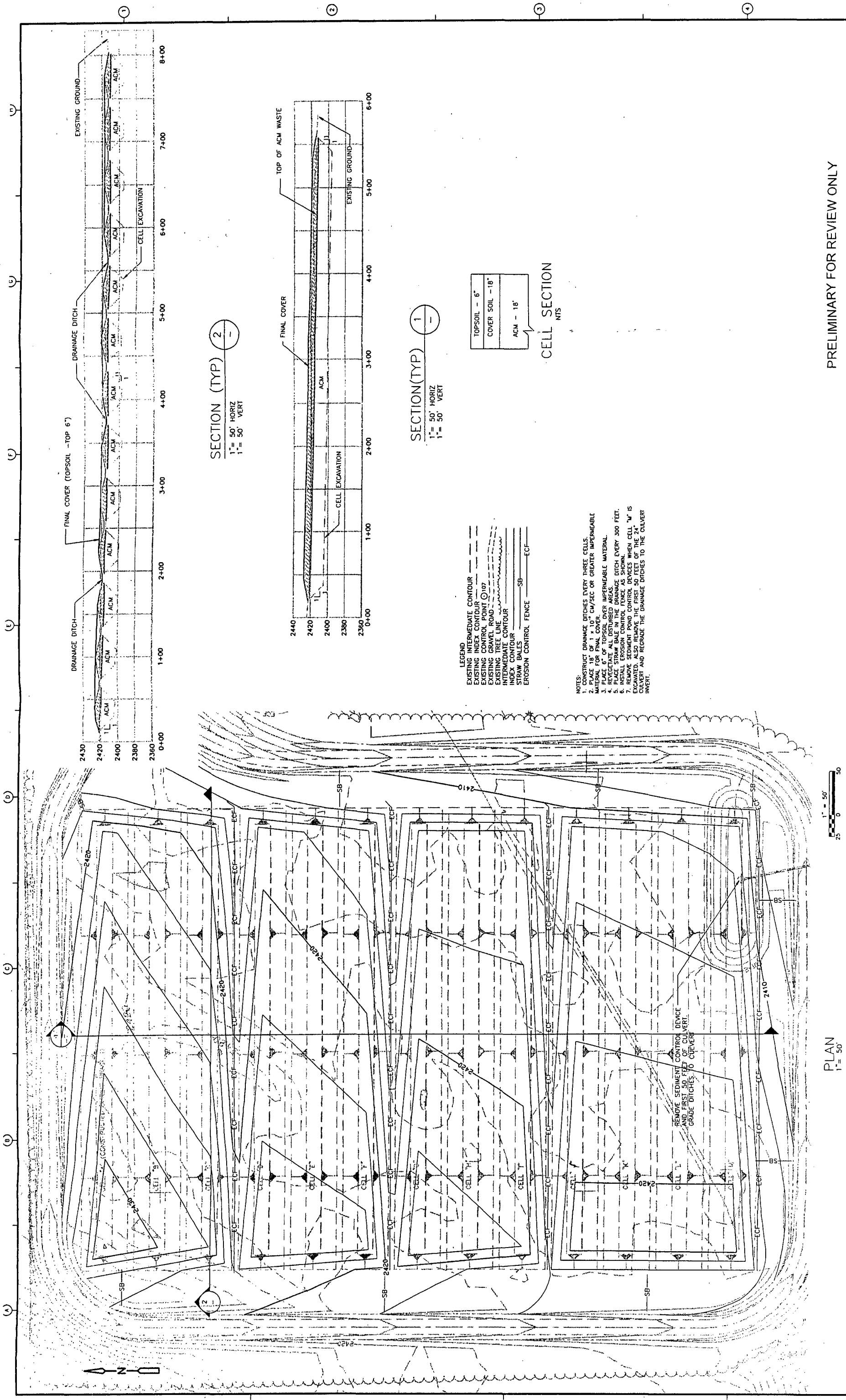


PLAN  
1" = 50'

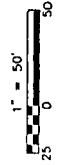
PRELIMINARY FOR REVIEW ONLY

DESIGNED BY: J.F.K.		PROJECT NO. 35767	
DRAWN BY: J.F.K.		FILE NAME: 35767-C4	
SHEET CHECK'D BY: J.F.K.		SHEET NO. C-4	
CROSS CHECK'D BY: K.M.			
APPROVED BY: P.J.B.			
DATE: MAY 2002			
REMARKS			
REV. NO.	DATE	DRWN	CHKD
ASBESTOS REMOVAL PROJECT LIBBY, MONTANA LINCOLN COUNTY CLASS IV ASBESTOS LANDFILL			
CDM CONTRACTOR SUPPORT PROVIDED BY: U.S. DEPARTMENT OF TRANSPORTATION ADMINISTRATIVE AND TECHNICAL ASSISTANCE ASBESTOS REMOVAL AND SITE RESTORATION IN MONTANA, ALABAMA, ARIZONA, IDAHO, ILLINOIS, INDIANA, IOWA, KANSAS, KENTUCKY, LOUISIANA, MISSISSIPPI, MISSOURI, MONTANA, NEBRASKA, NEVADA, NEW HAMPSHIRE, NEW JERSEY, NEW MEXICO, NEW YORK, NORTH CAROLINA, NORTH DAKOTA, OHIO, OKLAHOMA, OREGON, PENNSYLVANIA, RHODE ISLAND, SOUTH CAROLINA, SOUTH DAKOTA, TENNESSEE, TEXAS, UTAH, VERMONT, VIRGINIA, WASHINGTON, WEST VIRGINIA, WISCONSIN, WYOMING			

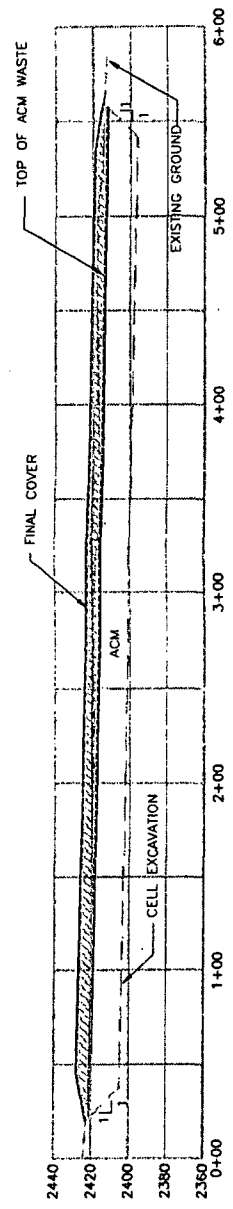




PLAN  
1" = 50'



SECTION (TYP) 2  
1" = 50' HORIZ  
1" = 50' VERT



SECTION (TYP) 1  
1" = 50' HORIZ  
1" = 50' VERT

TOPSOIL - 6"
COVER SOIL - 18"
ACM - 18"

CELL SECTION  
NTS

- LEGEND
- EXISTING INTERMEDIATE CONTOUR
  - EXISTING INDEX CONTOUR
  - EXISTING GRAVEL ROAD
  - EXISTING TREE LINE
  - INTERMEDIATE CONTOUR
  - INDEX CONTOUR
  - STRAW BALES
  - EROSION CONTROL FENCE
  - SB
  - ECF

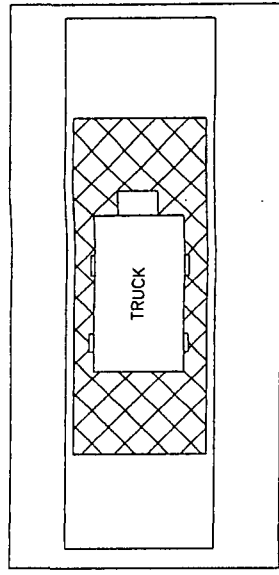
- NOTES:
1. CONSTRUCT DRAINAGE DITCHES EVERY THREE CELLS.
  2. PLACE 18" OF 1" x 10" CM/SEC OR GREATER IMPERMEABLE MATERIAL FOR FINAL COVER.
  3. PLACE 6" OF TOPSOIL OVER IMPERMEABLE MATERIAL.
  4. REVEGETATE ALL DISTURBED AREAS.
  5. CONSTRUCT DRAINAGE DITCH EVERY 300 FEET.
  6. INSTALL EROSION CONTROL FENCE AS SHOWN.
  7. REMOVE SEDIMENT CONTROL DEVICES WHEN CELL "W" IS EXCAVATED. ALSO REMOVE THE FIRST 50 FEET OF THE 24" CULVERT AND REGRADE THE DRAINAGE DITCHES TO THE CULVERT INVERT.

DESIGNED BY: J.F.K. DRAWN BY: J.F.K. SHEET CHECK'D BY: J.R. CROSS CHECK'D BY: K.M. APPROVED BY: P.J.B. DATE: MAY 2002	REMARKS	CHKD	DATE	REV NO.
CDM CONTRACTOR SUPPORT PROVIDED BY: FEDERAL PROGRAMS CORPORATION U.S. DEPARTMENT OF TRANSPORTATION ADMINISTRATIVE CONTRACT NO. 35767-01 CONTRACT NO. 35767-01 CONTRACT NO. 35767-01 CONTRACT NO. 35767-01				
ASBESTOS REMOVAL PROJECT LIBBY, MONTANA LINCOLN COUNTY CLASS IV ASBESTOS LANDFILL				
CELL FINAL COVER PLAN AND PROFILES (PHASE II)				
PROJECT NO. 35767 FILE NAME: 35767-C5 SHEET NO. C-5				

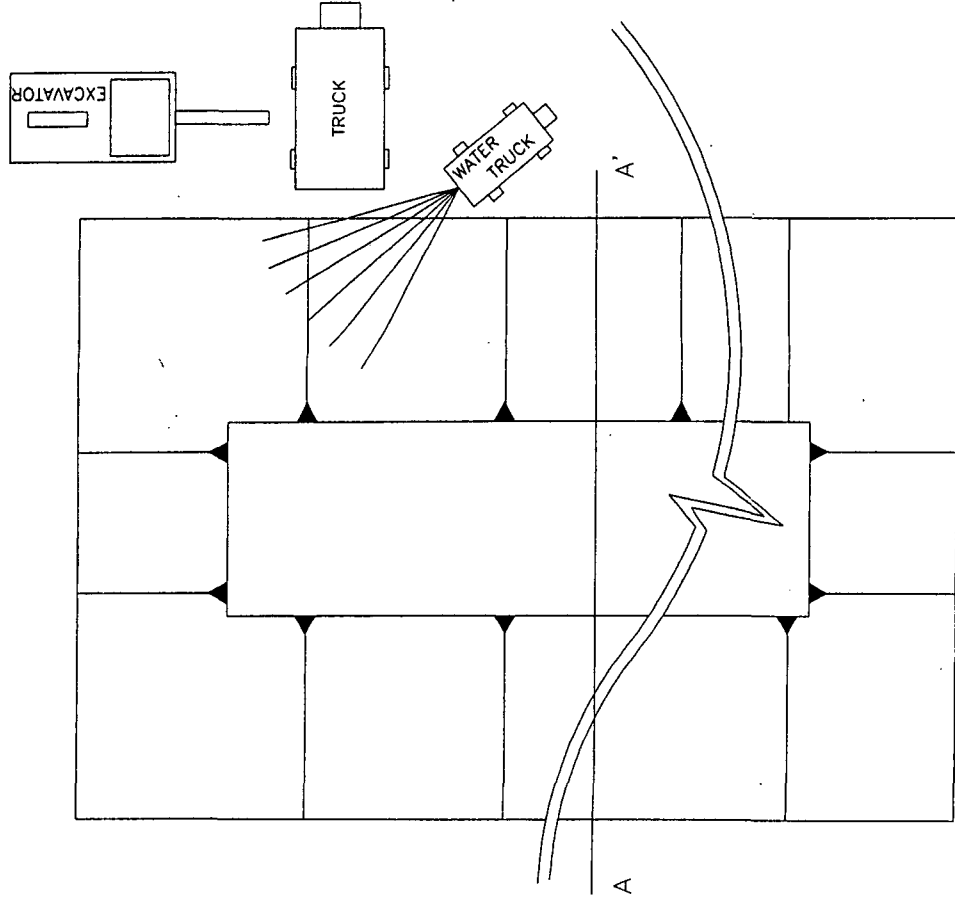




STEP ONE  
TRUCK SCALE STATION



NOTE:  
1. STOP AT THE TRUCK SCALE STATION AND COMPLETE ALL PAPER WORK PRIOR TO DISPOSAL AT THE ASBESTOS CELL.



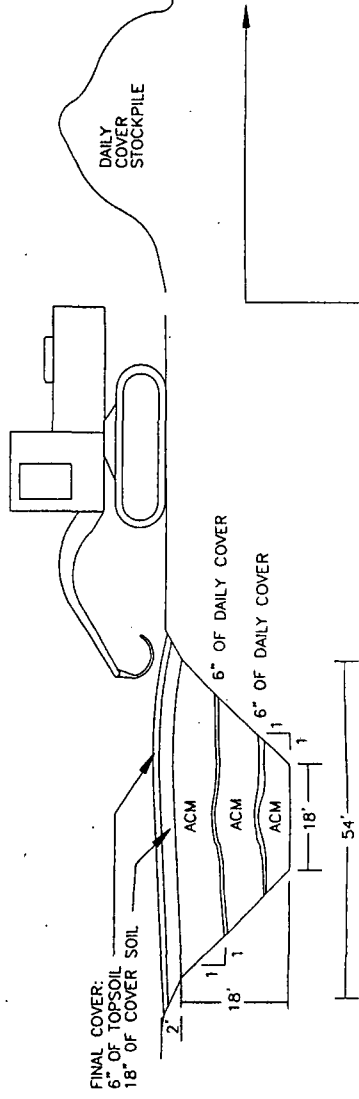
STEP TWO  
TYPICAL LANDFILL CELL

NOTES:  
1. NON-FRIABLE ASBESTOS CAN BE END DUMPED FROM TRUCKS OR ROLL-OFFS.  
2. FRIABLE BAGGED ASBESTOS IS PLACED IN CELL USING WEBBED NETTING, SLINGS, AND/OR RIGGING BY EXCAVATOR.

NOTES:  
1. LANDFILL IS LICENSED TO RECEIVE ONLY CLASS III AND CLASS IV WASTE.  
2. NO ONE IS AUTHORIZED TO ENTER THE LANDFILL CELL WITHOUT PERMISSION OF THE GOVERNMENT.  
3. CONTRACTOR SHALL PROVIDE WATER FOR DAILY OPERATION. (WATER MUST BE CLEAR AND MEET EPA STANDARDS.)  
4. ENCLOSE ALL DOUBLE BAGGED BAGS IN A LARGER CONTAINER OR A CARGO NET AT ORIGINATING SITE TO FACILITATE HANDLING.  
5. REMOVE FRIABLE MATERIAL FROM THE ROLL-OFF CONTAINER USING EXCAVATOR WITH SLINGS AND RIGGING AND PLACE DIRECTLY INTO THE CELL.  
6. END DUMP NON-FRIABLE MATERIAL (CONSTRUCTION DEBRIS) DIRECTLY FROM THE ROLL-OFF CONTAINER INTO THE CELL.  
7. WET ACM UNTIL IT IS CAPPED WITH DAILY COVER.  
8. PLACE AND ARRANGE ACM WITH EXCAVATOR.  
9. COMPACT PLACED ACM WITH PLATE VIBRATOR ATTACHED TO EXCAVATOR.  
10. PLACE A MINIMUM OF 6 INCHES OF COMPACTED COVER SOIL AT THE END OF EACH OPERATING DAY.  
11. ALL PERSONNEL SHALL BE IN LEVEL C PPE WHILE HANDLING ASBESTOS.  
12. CONTRACTOR TO PROVIDE HEALTH AND SAFETY PLAN.  
13. OPERATIONS TO STOP DURING PERIODS OF HIGH WINDS.  
14. AN EXCAVATOR WITH AN EXTENDED REACH WILL BE REQUIRED.

ACM - ASBESTOS CONTAINING MATERIAL

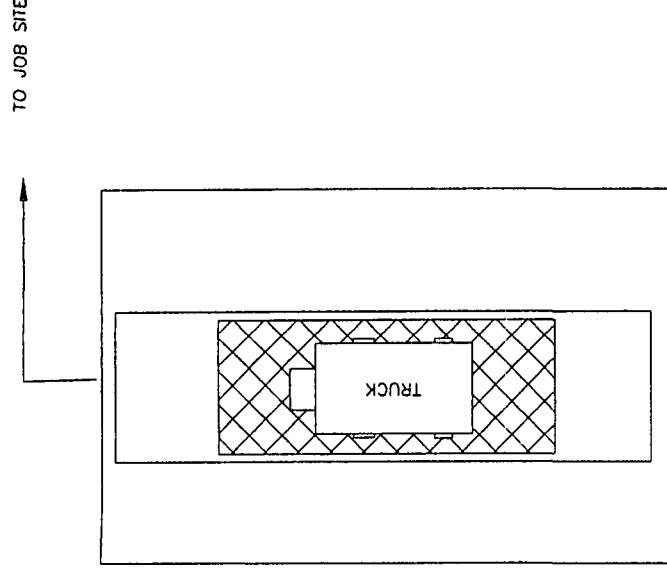
FINAL CELL CROSS SECTION PROFILE



CROSS SECTION A-A'

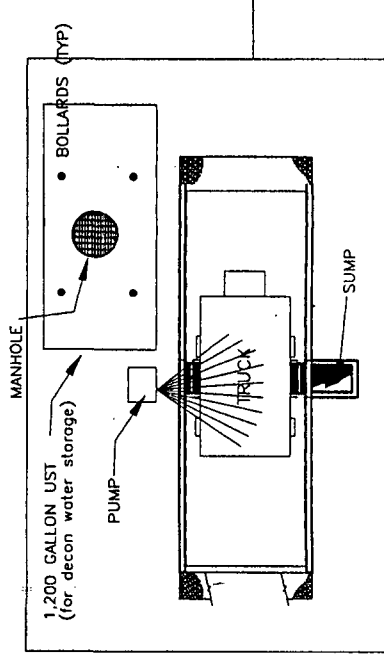
NOTES:  
1. EXCAVATOR REARRANGES ACM MATERIAL.  
2. COMPACTION.

STEP FOUR  
TRUCK SCALE STATION



NOTE:  
1. WEIGHT TRUCK AND COMPLETE PAPERWORK BEFORE EXITING SITE.

STEP THREE  
DECONTAMINATION PAD

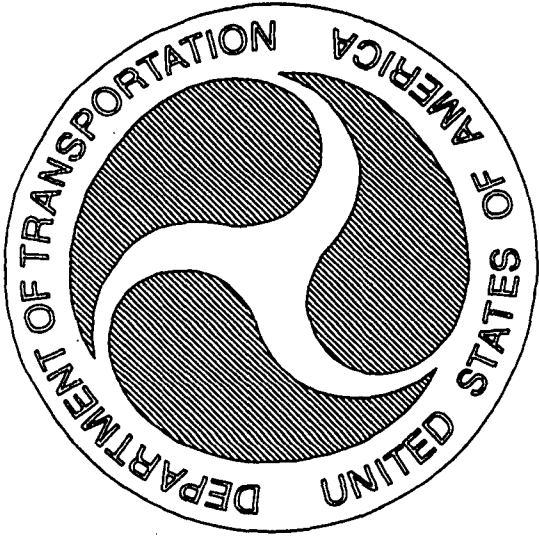


NOTES:  
1. DECONTAMINATE EQUIPMENT.  
2. DISPOSE OF SEDIMENT AND WATER IN CLASS IV LANDFILL.  
3. CLEAN SUMP AS NEEDED.  
4. CONTRACTOR TO SUPPLY PUMP AND PRESSURE WASHER FOR USE IN DECON OF EQUIPMENT, HAUL TRUCKS, PERSONNEL AND WATER.

PRELIMINARY FOR REVIEW ONLY

DESIGNED BY: J.K./K.M.	DATE: MAY 2002	REMARKS
DRAWN BY: K.M.		
SHEET CHECK'D BY: J.R.		
CROSS CHECK'D BY: K.M.		
APPROVED BY: P.J.B.		
REV. NO.	DATE	CHNG

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CONSTRUCTION DIVISION WASHINGTON, D.C. 20590	CONTRACTOR SUPPORT PROVIDED BY: <b>CDM</b> Federal Programs Corporation 12111 1st Avenue East Suite 100, Jacksonville, FL 32218 Tel: 904.751.1111 Fax: 904.751.1112	ASBESTOS REMOVAL PROJECT LIBBY, MONTANA LINCOLN COUNTY CLASS IV ASBESTOS LANDFILL	PROJECT NO. 35767 FILE NAME: 35767-C7 SHEET NO. C-7
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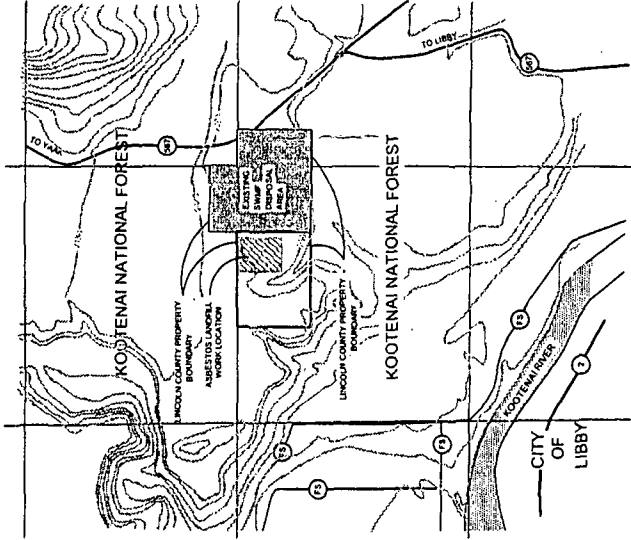
U.S. DEPARTMENT OF TRANSPORTATION  
RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION  
  
JOHN A. VOLPE NATIONAL TRANSPORTATION SYSTEMS CENTER  
ENVIRONMENTAL ENGINEERING DIVISION, DTS-33  
55 BROADWAY, KENDALL SQUARE  
CAMBRIDGE, MASSACHUSETTS 02142

# CLASS IV LANDFILL (PHASE I)

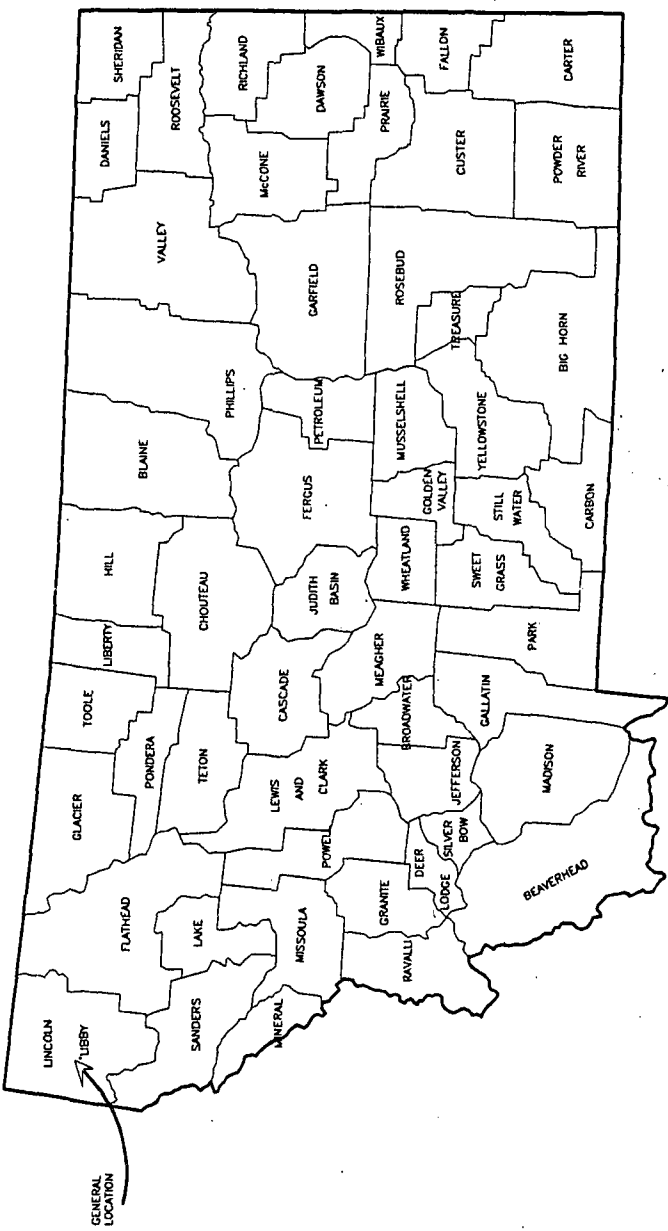
LINCOLN COUNTY, MONTANA  
JUNE, 2002

## LIST OF DRAWINGS

SHEET NO.	TITLE
G1	COVER SHEET
C1	EXISTING SITE PLAN
C2	SITE PLAN AND WORK THIS CONTRACT
C3	CLEARING AND GRUBBING
C4	ACCESS ROAD SITE PLAN AND PROFILE
C5	ACCESS ROAD PLAN AND PROFILES
C6	SIGNAGE PLAN
C7	DECONTAMINATION PAD
C8	TRUCK SCALE STATION SITE PLAN
C9	STORM WATER CONTROL PLAN AND DETAILS
C10	EROSION CONTROL PLAN AND SEDIMENT POND DETAILS
C11	FENCE AND CONCRETE APPROACH DETAILS
C12	CELL EXCAVATION PLAN AND PROFILES
C13	DETAILS



VICINITY PLAN  
NTS



MONTANA INDEX MAP  
NTS

CONTRACTOR SUPPORT PROVIDED BY:

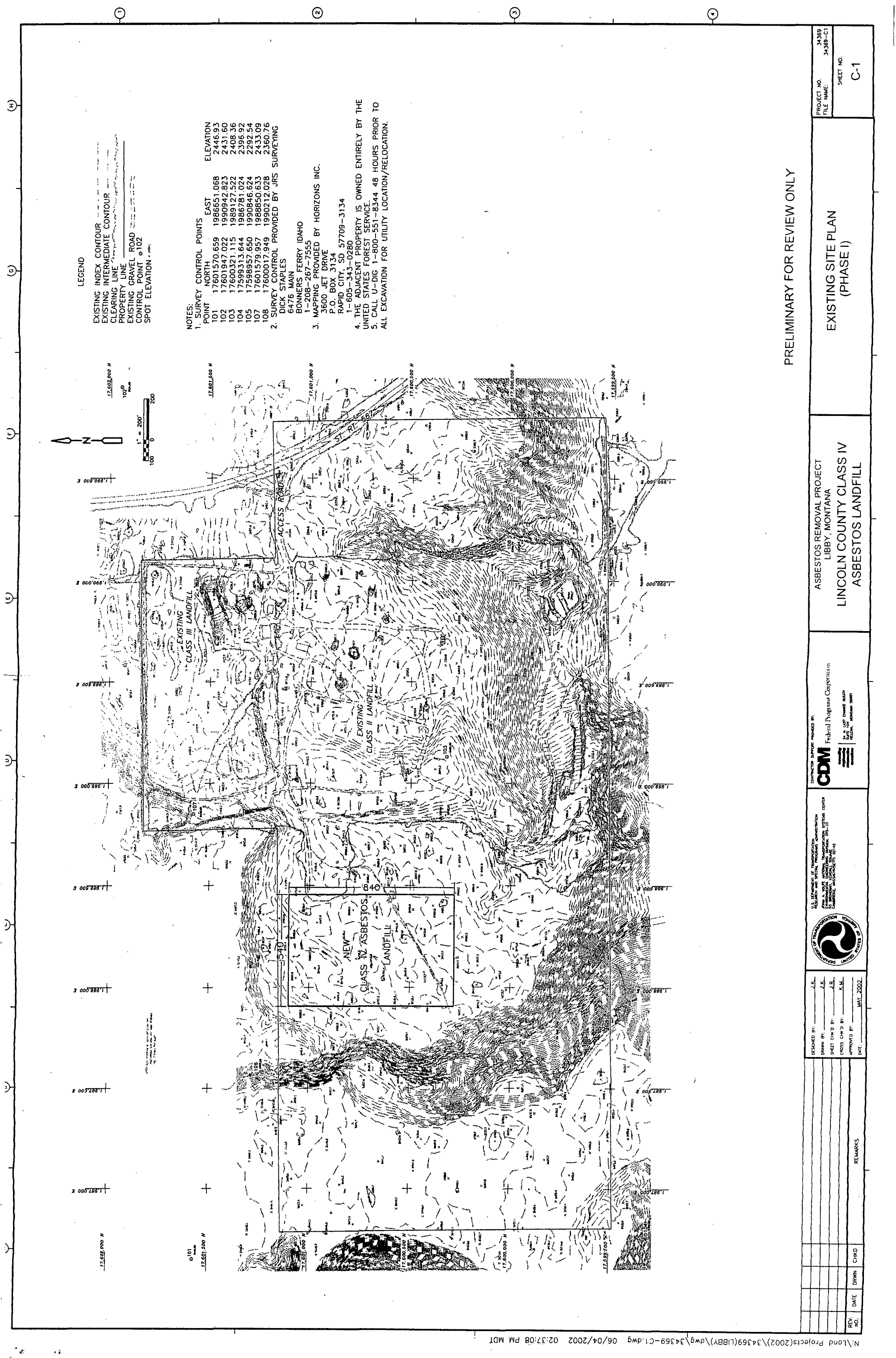


Federal Programs Corporation

consulting  
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34 NORTH LAST CHANCE GULCH  
SUITE 104  
HELENA, MONTANA 59601  
1-406-449-2121

PRELIMINARY FOR REVIEW ONLY



- LEGEND
- EXISTING INDEX CONTOUR
  - EXISTING INTERMEDIATE CONTOUR
  - CLEARING LINE
  - PROPERTY LINE
  - EXISTING GRAVEL ROAD
  - CONTROL POINT 0102
  - SPOT ELEVATION 2446.93

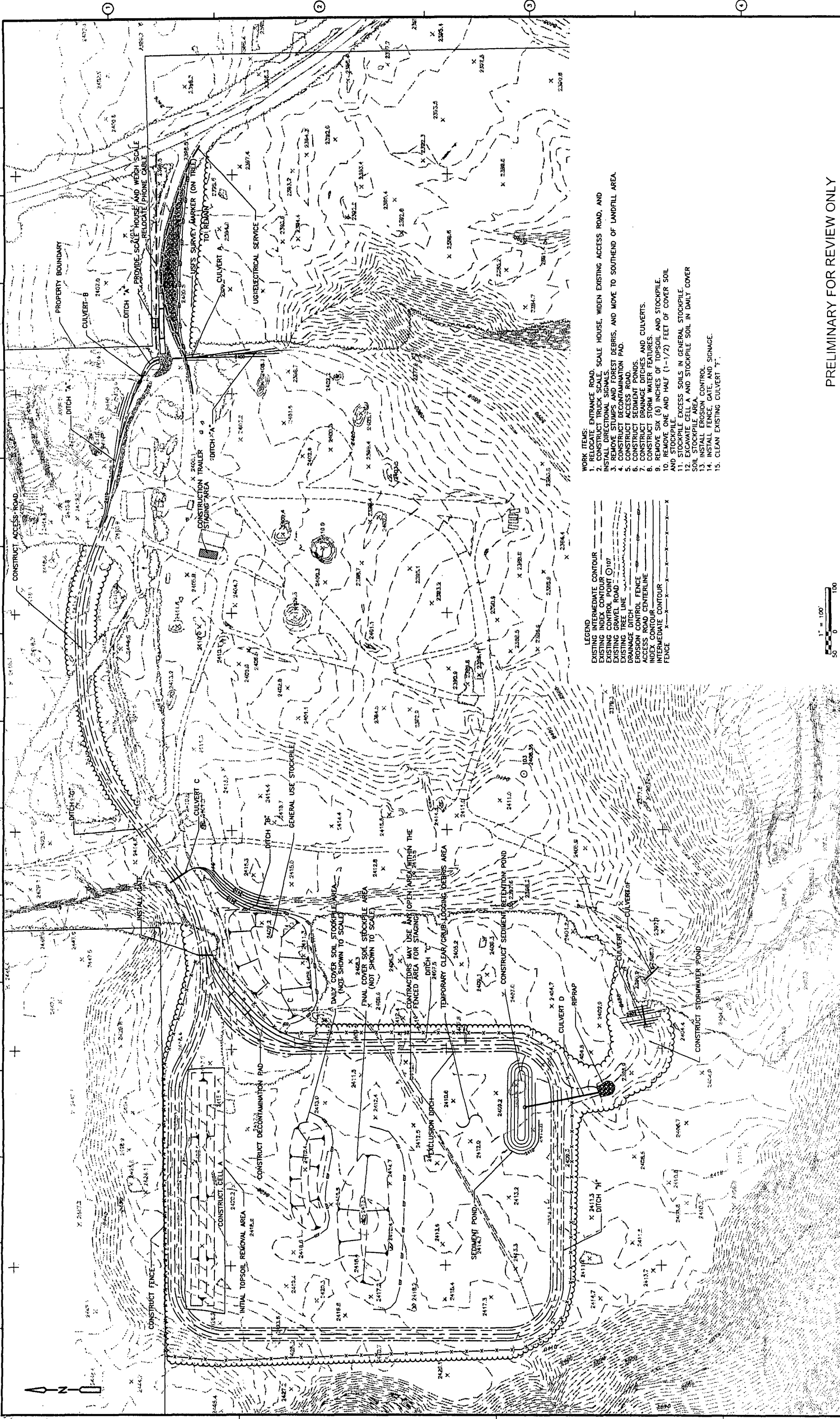
- NOTES:
1. SURVEY CONTROL POINTS
  2. SURVEY CONTROL PROVIDED BY JRS SURVEYING
  3. MAPPING PROVIDED BY HORIZONS INC.
  4. THE ADJACENT PROPERTY IS OWNED ENTIRELY BY THE UNITED STATES FOREST SERVICE
  5. CALL U-DIG 1-800-551-8344 48 HOURS PRIOR TO ALL EXCAVATION FOR UTILITY LOCATION/RELOCATION.

POINT	NORTH	EAST	ELEVATION
101	17601570.659	1986651.068	2446.93
102	17601947.022	1990942.823	2431.60
103	17600321.115	1989127.522	2408.36
104	17599313.644	1986781.024	2396.92
105	17598957.650	1990846.624	2292.54
107	17601579.957	1988850.633	2433.09
108	17600017.949	1990212.028	2360.76

DICK STAPLES  
6476 MAIN  
BONNERS FERRY IDAHO  
1-208-267-7555  
3. MAPPING PROVIDED BY HORIZONS INC.  
3600 JET DRIVE  
P.O. BOX 3134  
RAPID CITY, SD 57709-3134  
1-605-343-0280  
4. THE ADJACENT PROPERTY IS OWNED ENTIRELY BY THE UNITED STATES FOREST SERVICE  
5. CALL U-DIG 1-800-551-8344 48 HOURS PRIOR TO ALL EXCAVATION FOR UTILITY LOCATION/RELOCATION.

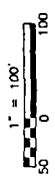
PRELIMINARY FOR REVIEW ONLY

PROJECT NO. 34369 FILE NAME: 34369-C1		SHEET NO. C-1	
EXISTING SITE PLAN (PHASE I)			
ASBESTOS REMOVAL PROJECT LIBBY, MONTANA LINCOLN COUNTY CLASS IV ASBESTOS LANDFILL			
CONTRACTOR SUPPORT PROVIDED BY: <b>CDM</b> Federal Programs Corporation 20 N. 1ST STREET SUITE 200 BOZEMAN, MONTANA 59701			
DESIGNED BY: J.K. DRAWN BY: J.K. CHECKED BY: J.R. APPROVED BY: K.M. DATE: MAY 2002			
REMARKS			
REV. NO.	DATE	DRAWN	CHECKED



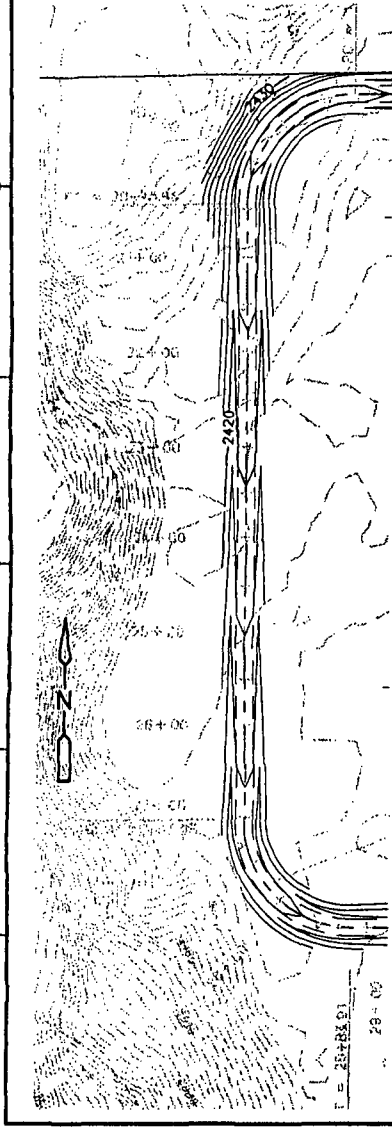
- WORK ITEMS:
1. EXISTING TRUCK SCALE
  2. EXISTING TRUCK SCALE HOUSE, WIDEN EXISTING ACCESS ROAD, AND
  3. REMOVE STUMPS AND FOREST DEBRIS, AND MOVE TO SOUTHWEST OF LANDFILL AREA
  4. CONSTRUCT DECONTAMINATION PAD
  5. CONSTRUCT ACCESS ROAD
  6. CONSTRUCT SEDIMENT POND
  7. CONSTRUCT DRAINAGE DITCHES AND CULVERTS
  8. CONSTRUCT STORM WATER FEATURES
  9. REMOVE SIX (6) INCHES OF TOPSOIL AND STOCKPILE
  10. REMOVE ONE AND HALF (1-1/2) FEET OF COVER SOIL AND STOCKPILE
  11. STOCKPILE EXCESS SOILS IN GENERAL STOCKPILE
  12. EXCAVATE CELL A AND STOCKPILE SOIL IN DAILY COVER SOIL STOCKPILE AREA
  13. INSTALL EROSION CONTROL
  14. INSTALL FENCE, GATE, AND SIGNAGE
  15. CLEAN EXISTING CULVERT "1"

- LEGEND
- EXISTING INTERMEDIATE CONTOUR
  - EXISTING INDEX CONTOUR
  - EXISTING CONTROL POINT
  - EXISTING GRAVEL ROAD
  - EXISTING TREE LINE
  - EXISTING EROSION CONTROL FENCE
  - EXISTING ROAD CENTERLINE
  - INDEX CONTOUR
  - FENCE

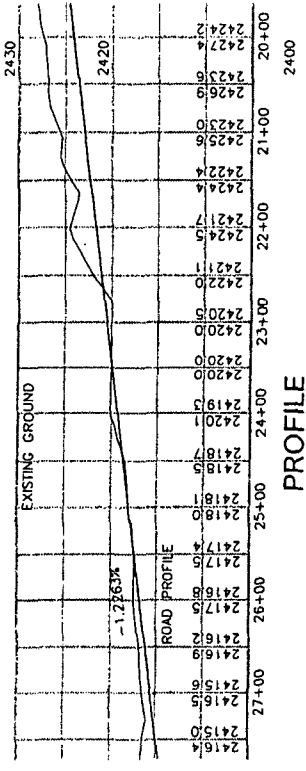


PRELIMINARY FOR REVIEW ONLY

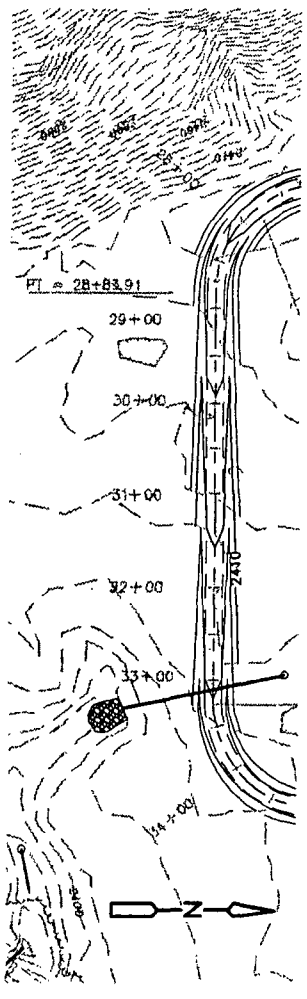
PROJECT NO. 34369 FILE NAME 34369-C2	SHEET NO. C-2
SITE PLAN AND WORK THIS CONTRACT (PHASE I)	
ASBESTOS REMOVAL PROJECT LIBBY, MONTANA	LINCOLN COUNTY CLASS IV ASBESTOS LANDFILL
CDM Federal Programs Corporation	CONTRACTOR SUPPORT PROVIDED BY: CDM Federal Programs Corporation
U.S. DEPARTMENT OF TRANSPORTATION REGIONAL AND STATE PROGRAMS CONSTRUCTION PROGRAMS WASHINGTON, D.C. 20590	U.S. DEPARTMENT OF TRANSPORTATION REGIONAL AND STATE PROGRAMS CONSTRUCTION PROGRAMS WASHINGTON, D.C. 20590
DESIGNED BY: J.F.K. DRAWN BY: J.F.K. CHECKED BY: J.F.K. APPROVED BY: J.F.K. DATE: JUNE 2002	REMARKS



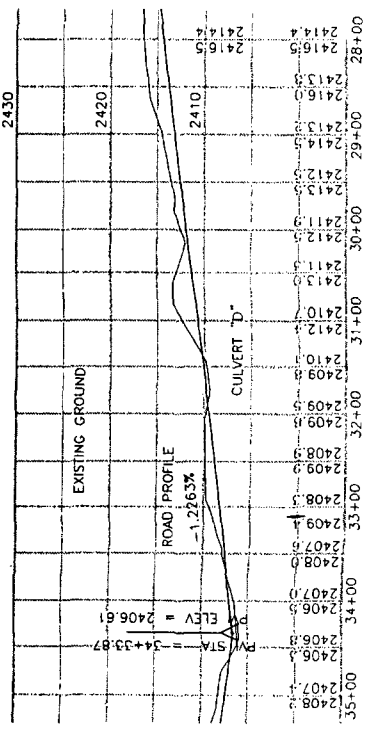
PLAN  
SCALE 1"=100'



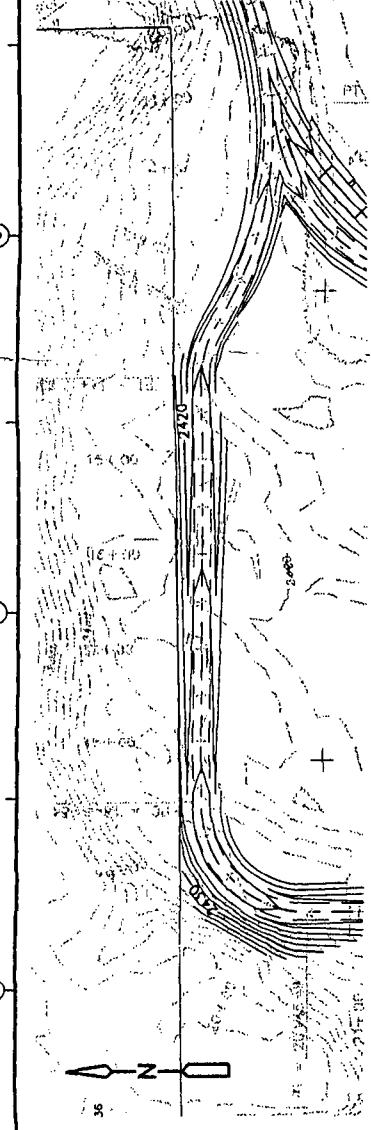
PROFILE  
SCALE 1"=100' (H) 1"=10' (V)



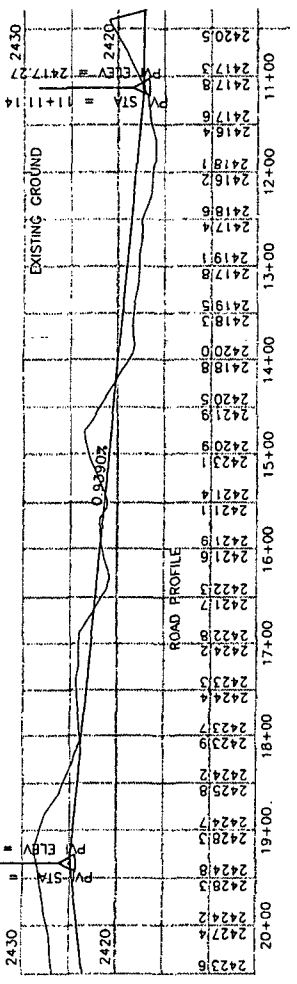
PLAN  
SCALE 1"=100'



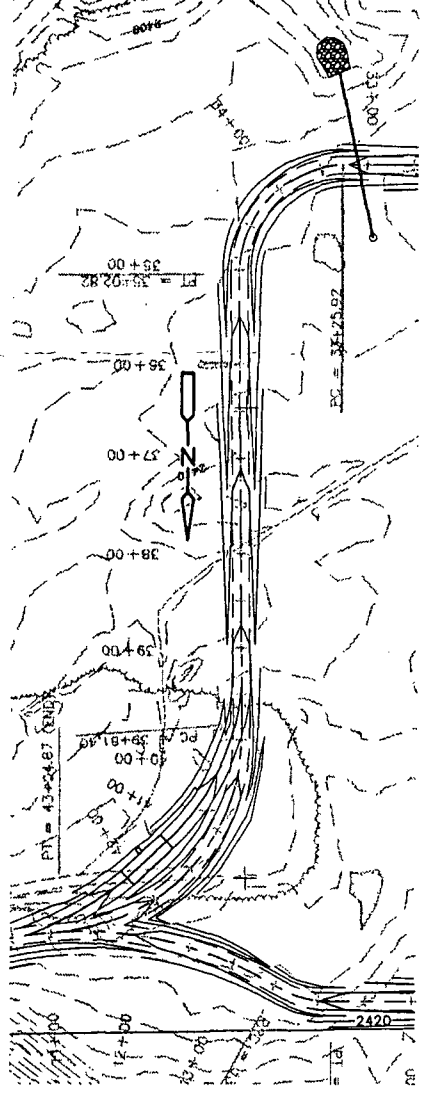
PROFILE  
SCALE 1"=100' (H) 1"=10' (V)



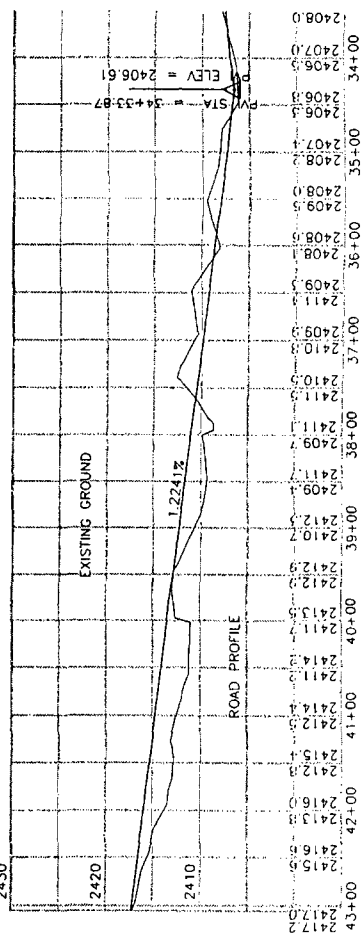
PLAN  
SCALE 1"=100'



PROFILE  
SCALE 1"=100' (H) 1"=10' (V)

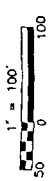


PLAN  
SCALE 1"=100'



PROFILE  
SCALE 1"=100' (H) 1"=10' (V)


LEGEND  
EXISTING INTERMEDIATE CONTOUR  
EXISTING INDEX CONTOUR  
EXISTING CONTROL POINT (CIP)  
EXISTING GRAVEL ROAD  
EXISTING TREE LINE  
ROAD CENTERLINE  
NOTE: SEE SHT C-4 FOR SURVEY LAYOUT INFORMATION




PRELIMINARY FOR REVIEW ONLY

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:	J.F.K.
DRAWN BY:	J.F.K.
SHEET CHECKED BY:	J.F.R.
CROSS CHECKED BY:	K.M.
APPROVED BY:	P.J.B.
DATE:	JUNE 2002



U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
WASHINGTON, D.C. 20590  
202-343-3300



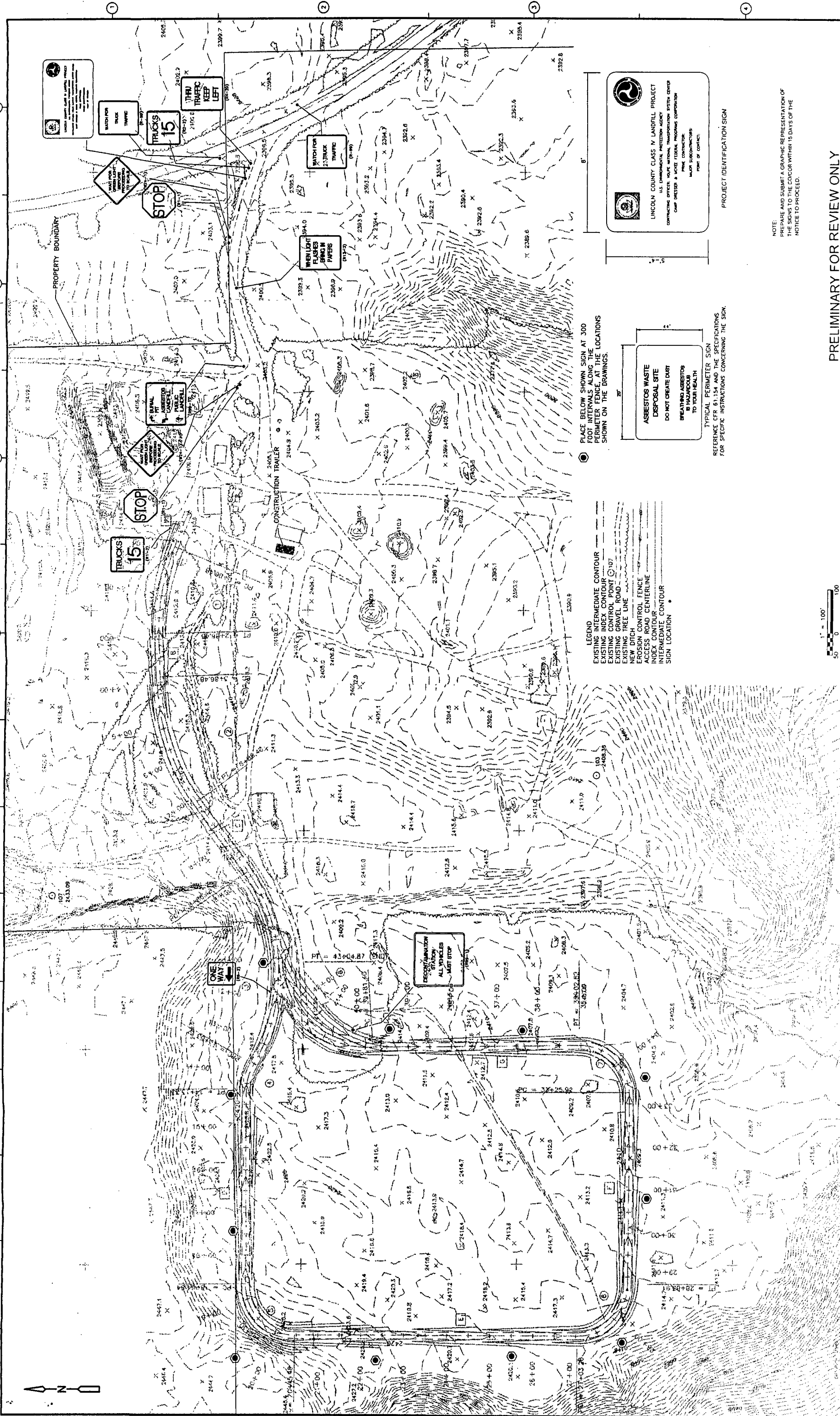
CONTRACTOR SUPPORT PROVIDED BY:  
CDM  
Federal Programs Corporation  
241 EAST CHASE CIRCLE  
SALT LAKE CITY, UTAH 84143

ASBESTOS REMOVAL PROJECT  
LIBBY, MONTANA  
LINCOLN COUNTY CLASS IV  
ASBESTOS LANDFILL

ACCESS ROAD PLAN  
AND PROFILES  
(PHASE I)

PROJECT NO. 34369  
FILE NAME: 34369-C5  
SHEET NO. C-5





PLACE BELOW SHOWN SIGN AT 300  
FOOT INTERVALS ALONG THE  
PERIMETER FENCE, AT THE LOCATIONS  
SHOWN ON THE DRAWINGS.

- LEGEND
- EXISTING INTERMEDIATE CONTOUR
  - EXISTING INDEX CONTOUR
  - EXISTING CONTROL POINT
  - EXISTING GRAVEL ROAD
  - EXISTING TREE LINE
  - NEW DITCH
  - NEW PERIMETER FENCE
  - ACCESS ROAD
  - INDEX CONTOUR
  - INTERMEDIATE CONTOUR
  - SIGN LOCATION

**PROJECT IDENTIFICATION SIGN**

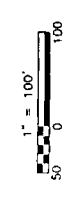
LINCOLN COUNTY CLASS IV LANDFILL PROJECT  
U.S. ENVIRONMENTAL PROTECTION AGENCY  
CONTRACTING OFFICE: VOLUNTARY NATIONAL TRANSPORTATION SYSTEM CENTER  
CAMP DIRECTOR & OFFICE: FEDERAL PROGRAMS CORPORATION  
PHONE CONTRACTOR:  
MAJOR SUBCONTRACTORS:  
POINT OF CONTACT:

**ASBESTOS WASTE DISPOSAL SITE**

DO NOT CREATE DUST  
BREATHE ASBESTOS  
IS HAZARDOUS  
TO YOUR HEALTH

TYPICAL PERIMETER SIGN  
REFERENCE CFR 61.154 AND THE SPECIFICATIONS  
FOR SPECIFIC INSTRUCTIONS CONCERNING THE SIGN.

NOTE:  
PREPARE AND SUBMIT A GRAPHIC REPRESENTATION OF  
THE SIGNS TO THE COCOR WITHIN 15 DAYS OF THE  
NOTICE TO PROCEED.



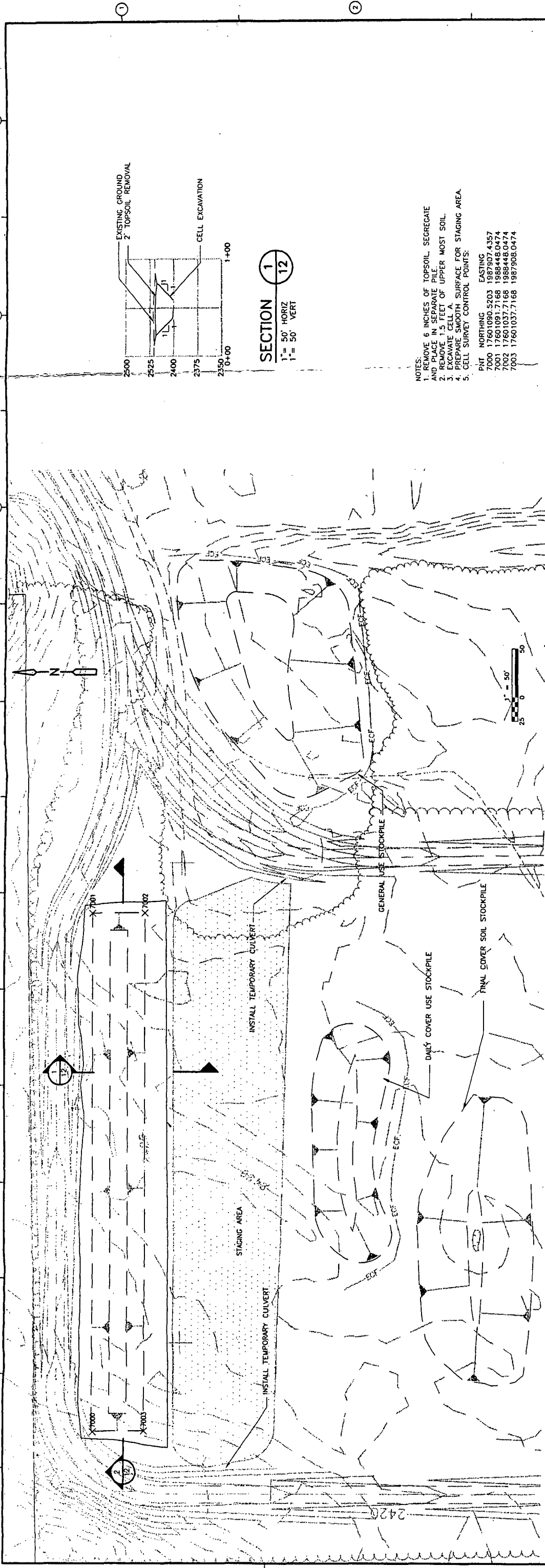
PRELIMINARY FOR REVIEW ONLY

DESIGNED BY: J.F.K.	REMARKS
DRAWN BY: J.F.K.	DATE
CHECKED BY: J.R.	DOWN
CROSS CHECKED BY: K.M.	CHKD
APPROVED BY: P.J.B.	REV. NO.
DATE: JUNE 2007	
U.S. DEPARTMENT OF TRANSPORTATION RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION VOLUNTARY NATIONAL TRANSPORTATION SYSTEM CENTER CAMP DIRECTOR & OFFICE: FEDERAL PROGRAMS CORPORATION CAMP DIRECTOR & OFFICE: FEDERAL PROGRAMS CORPORATION	
<b>CDM</b> Federal Programs Corporation 2411 EAST CHANCE CIRCLE SALT LAKE CITY, UTAH 84143	
ASBESTOS REMOVAL PROJECT LIBBY, MONTANA LINCOLN COUNTY CLASS IV ASBESTOS LANDFILL	
SIGNAGE PLAN (PHASE I)	
PROJECT NO. 34369	SHEET NO. C-6
FILE NAME: 34369-C2	

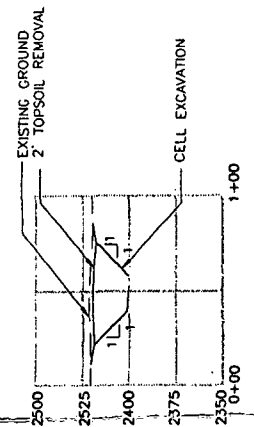






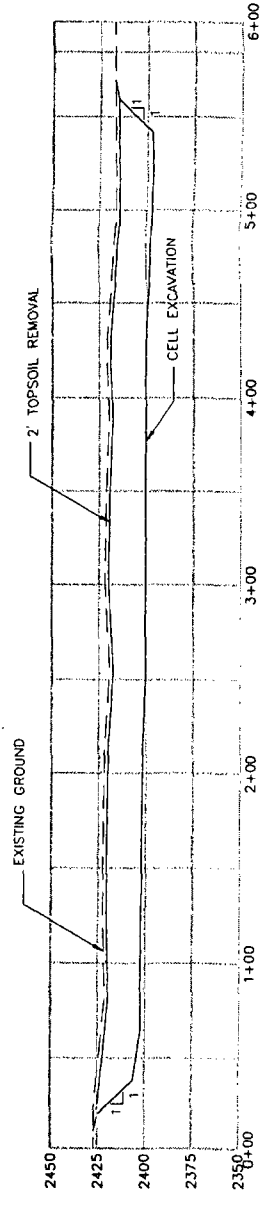


PLAN  
1"= 50'



SECTION 1  
1"= 50' HORIZ  
1"= 50' VERT

- NOTES:
1. REMOVE 6 INCHES OF TOPSOIL, SEGREGATE AND PLACE IN SEPARATE PILE.
  2. REMOVE 1.5 FEET OF UPPER MOST SOIL.
  3. EXCAVATE CELL EXCAVATION.
  4. PREPARE SURFACE FOR STAGING AREA.
  5. CELL SURVEY CONTROL POINTS:
- PNT NORTHING EASTING  
7000 17601090.5203 1587907.4357  
7001 17601091.7168 1588448.0474  
7002 17601037.7168 1588448.0474  
7003 17601037.7168 1587908.0474



SECTION 2  
1"= 50' HORIZ  
1"= 50' VERT

- LEGEND
- EXISTING INTERMEDIATE CONTOUR
  - EXISTING INDEX CONTOUR
  - EXISTING CONTROL POINT
  - EXISTING GRAVEL ROAD
  - EXISTING TREE LINE
  - NEW DITCH
  - EROSION CONTROL FENCE
  - STAGING AREA

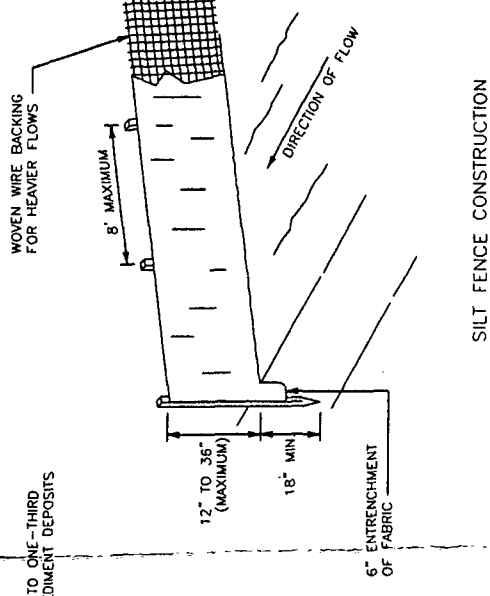
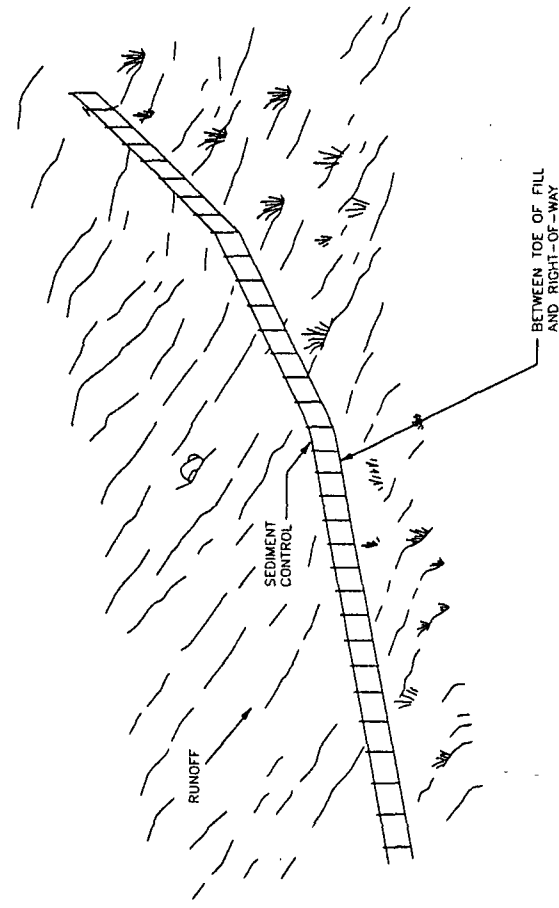
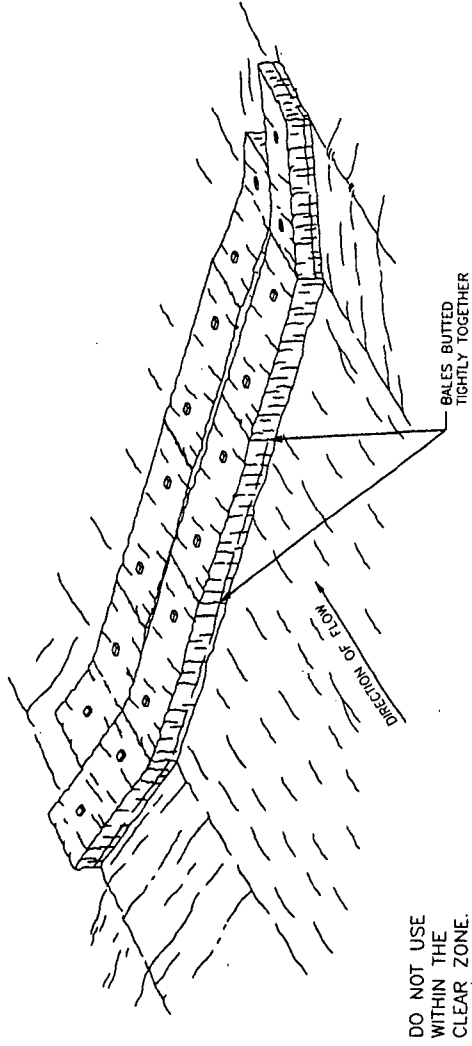
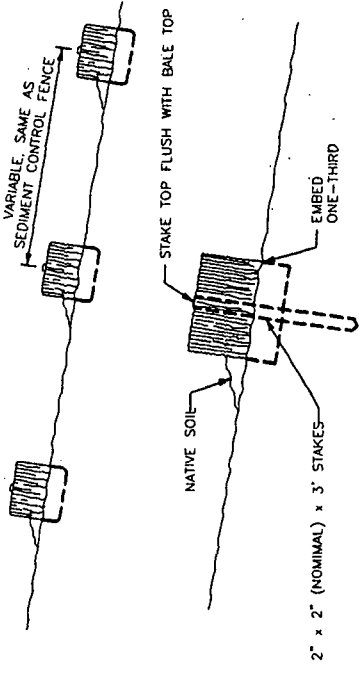
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PROJECT NO. 34369 FILE NAME: 34369-C12		SHEET NO. C-12	
CELL EXCAVATION PLAN AND PROFILES (PHASE I)			
ASBESTOS REMOVAL PROJECT LIBBY, MONTANA LINCOLN COUNTY CLASS IV ASBESTOS LANDFILL			
CONTRACTOR SUPPORT PROVIDED BY: <b>CDM</b> Federal Programs Corporation DATE: JUNE 2007			
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION OFFICE OF ENVIRONMENTAL AND HISTORIC PRESERVATION 400 NORTH MICHIGAN AVENUE, SUITE 1000 ANN ARBOR, MI 48106-0001			
DESIGNED BY: J.F.K. DRAWN BY: J.F.K. CHECKED BY: J.R. APPROVED BY: P.J.B. DATE: JUNE 2007			
REV. NO.	DATE	DRWN	CHKD
REMARKS			

1. STRAW BALE BARRIER (SBB) IS A SEDIMENT BARRIER CONSISTING OF ENTRENCHED, OVERLAPPING AND ANCHORED STRAW BALES TO REDUCE RUNOFF VELOCITIES AND RETAIN SEDIMENT. DO NOT USE STRAW BALE BARRIERS INSIDE THE CLEAR ZONE. STRAW BALES MUST BE CERTIFIED WEED-FREE.

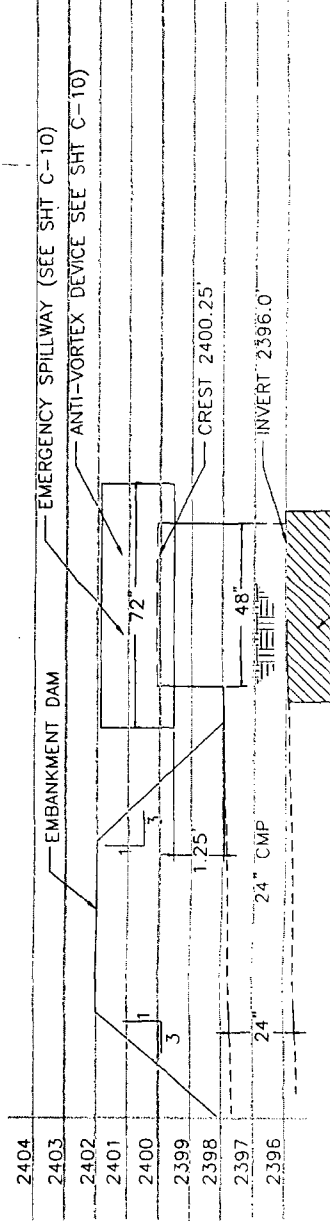
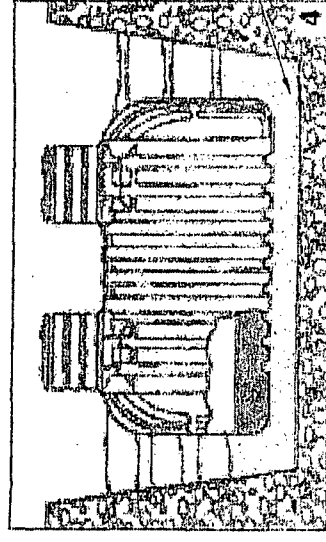
2. STRAW/VALE BARRIERS ARE USED FOR SHEET OR CONCENTRATED FLOWS TO REDUCE RUNOFF VELOCITY, PROMOTE SEDIMENT RETENTION AND ALLOW SETTLING. ENTRENCH THE BARRIER APPROXIMATELY ONE-THIRD OF THE BALE'S HEIGHT, AND BACKFILL ON THE UPHILL SIDE. USE 2 INCH BY 2 INCH (NOMINAL) BY 3 FOOT LONG WOODEN STAKES. DO NOT USE METAL STAKES. USE A MINIMUM OF TWO STAKES PER BALE.

3. AS A DITCH SEDIMENT TRAP, EXTEND THE END OF THE BARRIER TO SUCH AN EXTENT THAT THE BOTTOMS OF THE END BALES ARE HIGHER THAN THE TOPS OF THE LOWEST CENTER BALES. POSITION THE BARRIER TO PREVENT SEDIMENT FROM ENTERING THE DRAINAGE. DO NOT PLACE THE BARRIER ACROSS LIVE STREAMS. REPAIR OR REPLACE DAMAGED, UNDER-CUT OR END RUN BALES. APPLICATIONS INCLUDE (OUTSIDE THE CLEAR ZONE) DITCH SEDIMENT TRAPS, INLET/OUTLET PROTECTION, BANK PROTECTION AND TOE OF SLOPE PROTECTION.



## TYPICAL STRAW BALE INSTALLATION DETAILS

## TYPICAL EROSION CONTROL FENCE DETAILS



## TANK INSTALLATION DETAIL

STORM WATER POND SECTION  
NTS

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[illegible]

DEPARTMENT OF TRANSPORTATION  
U.S. DEPARTMENT OF TRANSPORTATION  
RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION  
JOHN A. VOPE NATIONAL TRANSPORTATION SYSTEMS CENTER  
ENVIRONMENTAL ENGINEERING DIVISION DTS-33  
50 BROADWAY, NEWELL SQUARE  
CAMBRIDGE, MASSACHUSETTS 02142

**CDM** Federal Programs Corporation

according to  
requirements  
of the  
Montana  
Department  
of  
Recreation

M. N. LAST CHANCE CLASH  
SUITE 104  
MELLEN, MONTANA 59001

ASBESTOS REMOVAL PROJECT  
LIBBY, MONTANA

LINCOLN COUNTY CLASS IV  
ASBESTOS LANDFILL

## DETAILS (PHASE I)

PROJECT NO. 34369  
FILE NAME: 34369-C13

SHEET NO. C-13